

ITEMS OF INTEREST.

VOL. XVII.

JUNE, 1895.

No. 6.

ORIGINAL COMMUNICATIONS.

RELATION OF PREDISPOSING TO ACTIVE CAUSES IN CARIES.

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[CONTINUED FROM PAGE 277.]

Facts lead us to conclude that the etiology of dental decay is not to be found alone in external influences, or chiefly in environment and active agencies from without, but also in the inherent nature of tooth substance—in a certain inherent impress and tendency gained in embryo and stamped on the impressible protoplasm.

The impressibility of protoplasm is illustrated in tattooing, where an impress is made on the cell elements composing the skin, causing a permanent change in the functions and habit. The same is illustrated in the formation of cicatricial tissue in which a new form of tissue results from violence received by the Malpighian layer of cells causing them to deviate from their normal production of tissue and to form a new kind of tissue, and to continue that deviation through the life of the individual.

These examples are illustrations of the potentiality of germ life, and of the certain and permanent character of protoplasmic impressions. I have known an instance where, in the mouths of three generations, the same tooth, correspondingly, decayed after adult life, while the contiguous teeth remained firm. I have also known excrescences to appear at an advanced period of life which, in location and form, were exact reproductions of what appeared on the person of the father when at the same age—the germ with its impress lying dormant for a period of about forty years; showing that in the son it was not produced by irritation, organic germs, or other external influences, but by inherited impress.

We may observe the principle illustrated in inanimate nature, where forest trees growing out of the same soil, in the same climate, subject to the same thermal influences, yet show different degrees of longevity and resistance to decay, whether dead or

alive. The wood formed under like influences will show different qualities of resistance to decay under the same circumstances of exposure. If fence posts of different kinds of wood are put in the same kind of ground, one will last five years, another twelve years, and another twenty or more years. In accounting for this difference in the period of decay of the different kinds of wood, no one thinks of attributing it to the development of fungi in immediate contact with the wood, but to the nature of the wood and its inherent power to resist the destructive ferments and the wasting agencies of fungi found in the ground. Cottonwood and oak have a different composition of fiber, and because of this difference the cottonwood decays early and the oak continues much longer. Red cedar has a very different elementary composition from oak, and the very same influences which waste the tissues of the oak have no effect on the cedar.

The very same difference of conditions and results exists with reference to decay of teeth in the same mouth and in different mouths—a difference created by peculiarities of tissue rather than by bacterial influence.

Fruits grown in the same soil, receiving the same cultivation and placed at maturity in the same cellar, will show a marked difference in their tendency to decay, because of one kind being a fall apple and another kind a winter apple.

It is sometimes said that if teeth are only kept clean they will not decay; for the reason that filth is a microbe harbor and a laboratory for the preparation of elements that act chemically on the teeth. Yet, in the very face of this teaching, we find teeth that are kept clean to the extremest limit of practicability, that decay early and rapidly; and on the other hand, we find teeth that are never cleaned from month to month, retain their firmness of substance to a good old age, in spite of the microbe.

The history of the microbe is the same as that of animal life everywhere. Food supply is essential to life support. His location is one of chance, not of choice. If he chance to enter a mouth where decomposition is already prevalent, liquifying organic substances for his food, he can set up housekeeping immediately and propagate an immense family. But if no such condition exists, the law of self-preservation compels the microbe to elaborate an acid and enter on the work of dissolving whatever hard substances he has access to which contain the nutrient element that he needs. If such exist in the teeth, the tooth substance is dissolved. Plant life exhibits the same great fact of life support. If organic ferments and the solvent properties of water fail to supply the plant with the nutrition it needs, it will exude

from the covering of its roots, and acids that will dissolve lime-rock, silex and all minerals and metals needed to supply its food elements. If a proper supply can be obtained, the plant lives; if not, it dies. The microbe succumbs to the same fate under similar circumstances. No doubt millions of organic germs, not finding a congenial field for their support, die of starvation. Multitudes of others die because, having reached the end of a limited existence, like the millions of ephemera that infest the air, covering the face of nature like a veil, live one day and die.

As animals of a larger species prey on each other, the stronger overcoming the weaker; and as plants of one specie take possession of a field, and by vigorous growing monopolize the virtues of the soil, or by the peculiar nature of their waste products drive from the ground all other plants, so we may expect to find that one specie of microbe will prove to be a lion and devour other microbes, or a baneful germ that will not allow other germs to prosper within reach of its baneful influence. The habits of life, whether exhibited by plants, animals or men, have many such striking analogies.

When the favoring and restraining conditions of dental decay are compared, it will be found that the latter far outnumber the former, and are for more potent in their influence.

Drinking water is thought to be one of the chief mediums for the transmission of disease germs. It is a demonstrated fact that whole families of children have been swept away by taking impure cistern water. Large districts in cities have been the localities affected by the use of well water from open wells receiving surface drainage. No doubt germs from the same source lodge in the mouth and affect the teeth. For the sake of curing the evil and arresting the danger, it has been asserted by those whose opinions are thought worthy to be trusted, that all cisterns should be thoroughly cleaned and washed with some harmless antiseptic compound two or three times a year, and that all water used for drinking should be thoroughly boiled or otherwise sterilized.

Now I must confess, that as to this part of scripture, I am a little heterodox, both in theory and practice. While I accept the teaching that some cisterns become so foul as to need cleaning, all do not. I have a cistern holding from two to three hundred barrels of water, from which my family receive their supply of water. That cistern has not been cleaned out in fourteen years; nor would I have it cleaned out even if I could have it done without expense. I have no doubt that there is a sediment four inches deep at the bottom, made up of decayed leaves falling annually from near-by trees on the roof and in the water pipes of my dwelling, together

with dust and all atmospheric germs, beside an endless variety of microbes, living and dead. But I am not alarmed, the water is always pure and sweet, while some of my neighbors who frequently empty and wash their cisterns are having foul water about half the year. It is a very common remark of those who drink water from my cistern, "What pure water you have." Do not the compensations of nature and the antagonizing forces that restrain the active forces of decomposition, as I have presented them in this paper, explain how it is that the water is kept pure?

Rain water when it first enters the cistern is filled with all the impurities that float in the air and are washed from the water-shed. Then it undergoes a clearing process by fermentation, like the must of wine, the wort of beer, and the fruit juices that change to vinegar.

After the fermentation these turbid liquids are no longer must, wort and apple juice, respectively; but wine, beer and vinegar—all clear and pure liquids. The water undergoes a similar process of clarification.

A sea captain who had sailed the ocean for twenty years, told me that he could find no water on the face of the globe that would keep so well as the water of the Mississippi river. This at first surprised me, knowing as I did, that this river is the drainage outlet of a vast flat country covered with decayed vegetation. He remarked, that it passes through a "curing" process, and thereafter remains pure for an indefinite time. The same is true of the water accumulating in a cistern. There are fermentable impurities sufficient to form a nucleus and invite organic germs which start the fermentation, and by fermentation the whole body of water becomes clarified, as vinegar, wine, cider and beer become clarified. So long as the vinegar plant is kept in the vinegar, and the lees in the wine, all is well. So by leaving the sediment in the cistern of water it performs the work of yeast and lees.

I have demonstrated the same principle in a barrel of water kept at my office through the entire summer, refilling from time to time with river water as I had need, but never emptying out the sediment—the water being kept uniformly pure thereby. These illustrations show the strict guard that nature holds over the processes of decomposition.

Were it not for the checks, restraints and compensating balances that nature holds over the retrograde processes by which organic nature returns to the original elements, the decompositions which are inevitable would depopulate the world in a single summer; and were it not for the restraints and antagonisms set up in the mouths of the human family, every tooth would melt down

under the influence of decay within a year, and not one be seen in human jaws; and that, too, in spite of every practicable system of antisepticism that could be adopted.

On the contrary, we find individuals in whose mouths the conditions favoring decay—the so called predisposing causes—are so overmatched by resisting and restraining conditions, that decay of the teeth is prevented. This is in harmony with the philosophy of life, and the demands of physiological functions. This is nature's self-defense against destruction—a sure cure for dental decay. Antisepticism is not a cure. Prophylaxis is.

Here there meets us the grandest theme ever presented in dental literature or science—the prevention of dental decay. Not that prevention which arrests decay when its work of destruction is half done; but that prevention which does not allow the work of decay to begin; that prevention which establishes by hygienic law, a barrier in the very nature of tooth substance that will effectually resist all external influences; that prevention which reaches back to embryo life, and touches the protoplasmic germ and stamps it with longevity. We need less of cottonwood and poplar, more of oak and cedar in teeth—more of the resistance of platinum and gold in their natures. We need a better understanding of that dental hygiene that guards the very portals of life and nutrition, and forbids the entrance in the tissues of the teeth, of every element of weakness and decay. Then we may expect that teeth will bear on their faces the monumental records of a comfortable and happy old age.

FRANKNESS.

Its lips are sweetened with truth, and its tongue is a stranger to mischief. With open face and revealed life it wins the heart and confidence of men. It is in the rank of honesty the noblest work of God. Social, civil, and religious forces are tributary to manliness. A manly man is the crowned head in the home. Not autocratic with equals, not second to any, but helpful to all. He is in society, better than a code of laws; he is the silent counselor of the thoughtful; he is the Court of Appeals for the differing; he is the defense of the innocent and the terror of evil-doers. In political life he is less partisan and more the advocate of principles. He seeks not his own promotion, but he seeks the good of the people. If he is thrown in the den of political lions he is not destroyed. He is not appreciated by serving politicians. They are the hope of good government, and the need of our time.

L. C. Ineal.

SANITARY PARTIAL DENTURES.

Cephas Whitney, D.D.S., Kingston, Jamaica.

It has always appeared a matter of surprise to me that "tube teeth" have not been more generally used in the United States for artificial partial dentures.

The mechanical principles involved in their construction and mounting are excellent, more particularly where the masticators are used. One great fault is the absence of a porcelain gum where it is needed.

The object of this article is to show my method of making a partial plate, utilizing the strong qualities of the tube teeth, and the cleanly conditions and possibilities of fusing porcelains to a small platinum plate. One case which has just been finished will illustrate the process.

The patient, a lady, has lost the upper incisors and the first bicuspid, the rest of the upper teeth being in good condition, excepting the left second bicuspid, which is badly broken down, though the pulp is in fair shape. There is considerable shrinkage in the labial aspect of the mouth, but very little where the bicuspid have been lost. The teeth are of the short crown variety, and the bite is close.

To begin with, the defective bicuspid was incased in a Land jacket crown, which not only beautifully restored the appearance of the tooth, without destroying the pulp, but gave a non-destructible pier to clasp.

A small iridio-platinum plate was struck up, of No. 28,* reaching well up under the lip, as the patient exposes the gum in laughing; no provision for gum was made at the bicuspid as it was not needed.

After fitting the plate, iridio-platinum wire, No. 20, was soldered along the upper edge of gum portion of plate, and also beginning at the second bicuspid on one side; the No. 20 wire was soldered along the plate ending at the relative tooth on the opposite side. This wire described a curved course, a little posterior, but corresponding to the lingual necks of the teeth which have been lost. This forms a shoulder or boundary for the porcelain.

A clasp for the jacket crown was made from the same material as the plate (indeed all the metal parts were fashioned from iridio-platinum) by rolling out No. 16 wire to No. 25, which was shaped and soldered to position as customary.

At this stage the teeth which had been selected (flat back in-

* Standard American plate gage.

cisors and bicuspid facings) were ground to position and held in place with sticky wax at the labial and buccal necks respectively. A pointed marker, which would readily pass between the pins, tipped with a thickish paste of vermilion and olive oil, was passed down close to the teeth between the pins, till the plate was marked with a tip of the mixture, which was centered with a sharp-pointed graver. A spear drill, No. 17, was used to pierce the plate at the graver pits. Posts of different thicknesses were now formed by drawing No. 12 wire, and cutting off for each tooth when I had reached the proper heft. In judging of this, you had better err in having it too thick than too thin. No. 14 or 15 will suit most cases, though I have used No. 12 for molars. Each post was slightly tapered at the plate end, and then the respective holes were reamed and countersunk on both surfaces till the posts could be tightly inserted, a small portion projecting through on the palatal surface, which is finally ground smooth after soldering. The English method at this point is to groove the posts at the hole, or tapered part, to aid the solder in flowing through to the opposite countersink, and I have found it very efficient. The posts were made to clear the bite at the bicuspid enough to be finally covered with porcelain. At the incisors they were flattened out between the pins and the incisive edges, and fell short of those edges, so that they would also be covered with porcelain. After the posts had been all well adjusted, they were firm enough to stand by themselves, and the teeth were removed by softening the wax in warm water. The remaining wax was removed by allowing a large stream of hot water to play over the plate, but with no force, because of posts. The teeth were cleaned and gently seated, so that any movement in posts could be corrected. On removing teeth again the posts were soldered, when case was placed back on articulator.

Some might prefer not to remove teeth at all; but after posts are fitted, bend pins around them, gently run off wax, invest case, solder teeth to posts and posts to plate, grinding their pins to clear bite in front afterward.

However, to return—the teeth were finally seated, and pins were bent around their respective posts and ground to accommodate occlusion, always leaving room for porcelain to cover.

Porcelain the color of teeth was now selected and packed around the posts from the incisive edges down to wire shoulder or ridge, imitating, to a degree, the natural organs. The lingual cusps of the bicuspid were built solidly up and carved in shape, taking care to build larger, also longer than the bite, because of shrinkage. The same body was packed on gum portions of plate.

I have this to say to those who intend going in for porcelain work—pack your first bake solidly as possible and build a little full to anticipate shrinkage, by doing this you will never have to make more than two bakes, including the gum-enamel; if you do not pack as advised you are apt to have flaws, or be necessitated in making more than two firings, and in the end never have a homogeneous clean bake.

Because of my previous paragraphs I do not see the need of describing the final application of body and gum, as every porcelain worker is necessarily familiar with the process.

I now fitted in my patient's mouth a plate that is thoroughly clean, strong and sightly; in fact, I know of no process (where a partial denture with gum attached is called for), which more highly exemplifies the foregoing statement.

Senator Sawyer, of Wisconsin—who has been styled “Old Sawlogs,” from the fact that he made his great wealth in the lumber business—in an interview with a reporter some time ago, said: “I commenced life a rich man, and I have more than held my own. I inherited a fortune from my Father in Heaven. It consisted of robust health, Christian parentage, and good early training. My father and mother moved away from the old homestead in central New York when I was seventeen years of age, and I did not want to go with them; so father bound me out to my elder brother till I was one and twenty. I was bound out for \$100. I borrowed that amount, paid it to father, and commenced the battle with the world at the age of seventeen years, \$100 in debt. But my inheritance of health was magnificent. There never was a day when I was not able to work, and to work hard, too. So when I was twenty-two I started West with just \$2,200 in cash. I had paid off that borrowed hundred and accumulated \$2,200 besides. It was all owing to strict economy. Why, to this day, don't you know, it hurts my feelings to see a gas jet turned too high at home, in a hotel, or in the corridor of the capitol. I don't like to see a waste of anything. It is well known—almost too well known—that I give away a great deal of money. I like to give money to poor people, where I know it will do good and relieve suffering; but I would not give a penny to a beggar if I thought it would be wasted in drink. I am not stingy, but am as economical as I was when I was struggling along in poverty; and I always hope to be careful about needless expenditures.”

POSITION AT THE CHAIR.

Dr. W. S. Elliott, Trenton, N. J.

Not less important to the comfort of the patient is that of the operator. While an hour or two of even impatient submission on the part of the patient is thus limited, the repeated demands on the operator is taxing in the extreme.

Ease of position at the chair is a conservator of nervous energy and promoter of satisfactory purposes.

The one unfortunate circumstance which tends to opposite conditions is the fact that the treading of the ordinary standard engine, placed, as it usually is at the right, necessitates the partial turning of the body toward the window and away from the patient; also compelling the operator to stand during the several hours of work which in itself is wearisome and exhausting.

Before the general introduction of the engine of the S. S. W. class, the Lyon's stool was in quite general use, and was appreciated as almost a necessity by enabling us to sit during the long hours of tedious operations. To sit and at the same time to tread the engine, and otherwise manipulate it became an impossibility, consequently the stool was set aside and the awkward position submitted to as a warrantable compromise.

No feature of the college curriculum seems to tend toward this phase of education, for in passing among the students, at their work in the clinic room, it is at once evident that they labor under great discomfort and inability.

What is the remedy?

The absolute necessity of employing foot-power does not now exist; water and electric motors have largely replaced the foot-driver, and in the larger towns and cities where this power is directly available economy of personal energy is offered. Even in small towns and villages the storage battery may be introduced with success and with limited cost.

The adoption of independent motive-power, however, is only a step toward a full consummation of requirements. The standard engine must be dispensed with; the Lyon's stool, or its equivalent recalled, and the Elliott suspension engine adopted as the most sensible and efficient machine. The advantages of this instrument are many. One of its prominent features is the extension of the driving cord directly to the hand-piece, thus avoiding tremor and back lash—a principle appreciated and followed out in the later Bonwill and Perry-Weber inventions; but in these there remains the disadvantage of not being able to maintain an invariable tension

of the cord on the pulleys, but the most distinguishable feature is that of "suspension" from the ceiling. By this arrangement simplicity is attained, and extensive and a complicated system of machinery avoided. The hand-piece is thus brought into convenient reach, as it is suspended and self-maintained just above and a few inches back of the head rest.

If through necessity foot-power must be used, then the driving wheel should be placed behind the chair that the body may not become distorted in the effort to reach the treadle. This forced necessity, of course, will compel the standing position, unless the treading is relegated to an assistant.

With the independent power, the sitting posture facing the patient and the suspension engine, manipulation may go on for hours with the minimum of fatigue and the best assurance of successful results.

A further suggestion: The swinging bracket table in front of the patient is not a necessity—though sometimes convenient. In lieu of this a small stationary stand at the operators' front will receive his instruments, etc., and within arm's length at his left should be the cabinet of drawers.

Dr. E. S. Chisholm, of Tuscaloosa, Ala.: Recent studies in bacteriology have not been carried on in the line which the original investigators had laid down. • We have recently discovered bugs in everything, and if the condition of things are such as we are now taught, we would have been permeated with disease and the whole world have been dead long ago. I do not wish to be understood as saying that bacteria do not play an important part in many things, but we have gone to extremes. I am willing to go on record as saying that acid plays a far greater part in the causation of decay than bacteria, and that the location of decay in the smaller cavities of the teeth is only the indigenous home of bacteria.

Dr. O. A. Weiss says he uses a 4 per cent solution of cocain, using it almost exclusively in the extraction of teeth, with the most satisfactory results. "During this time only one case of real intoxication occurred, and that was due to an excessive dose of a 10 per cent solution. Syncope, partial or complete, is sometime met with, but is not necessarily due to the cocain. Sloughing has never occurred. Many who have used cocain and observed toxic symptoms, noted them when using stronger solutions, and as they diluted their solutions to from 2 to 4 per cent the toxic symptoms disappeared."

AMPUTATION OF TOOTH-ROOTS.

In the last Mississippi Association Dr. W. E. Walker described what he claimed to be an unique case from the fact that in a mouth, of which all of the teeth were perfectly round externally, no caries having ever appeared in any of the teeth, one root of each of the four first molars had abscessed and necrosed causing death of the pulp, the abscesses having been chronic for some twenty years when the case came under Dr. Walker's care in the spring of 1892. At that time an angry looking tumor had developed on the gum exciting the apprehension of the patient, who then applied for relief. Examination showing the posterior root of the lower first molar, denuded of pericementum, and therefore incurably abscessed, it was decided to amputate the diseased root. The tooth was opened through the perfect crown, the putrescent pulp removed from the anterior canals and pulp chamber. The posterior root was then amputated on a line above the gum margin to the point of bifurcation, the other canals properly filled, the pulp chamber being filled with gutta-percha, which was pressed through the opening at the point of amputation, and smoothed off on the under side with a warm instrument. The morsal opening was filled as usual. Nothing was done to the other first molars; the tumor was left to take care of itself, the source of irritation having been removed. Three years later—this present spring—the patient requested the same operation be performed on the other three first molars, the first proving a perfect success. The tumor had disappeared, the tissues were healthy, the socket had entirely filled up, and the gum fitted in under and around the projecting posterior portion of the crown, so that, except by close examination with an instrument, no one would suspect that the tooth had only the anterior root. The posterior root of the right lower first molar and the lingual root of both of the upper first molars being in a similarly abscessed and necrosed foul condition, coated with serumnal calculus, were, last March, operated on in the same manner, with promise of retaining for the patient three more good teeth.

The surface of the vulcanite plate next to the mucous membrane should be smooth. We know of no better method to accomplish this than by the use of tinfoil on the model. This should be pressed on the surface of the model with a shaving-brush, after the surface has been varnished with shellac. After removing from the vulcanizer it is easily removed with nitro-muriatic acid.

A SUSPENSION DENTURE.

At a clinic of the Mississippi Dental Association, April 4th, 1895, Dr. C. L. Alexander, Charlotte, North Carolina, constructed a piece of bridge-work on an original plan, which he terms a suspension denture.

By this method the natural teeth are not devitalized, nor are they subjected to any cutting, beyond that of drilling a hole in the labial surface for the reception of screw-posts, which serve as points of support for the denture.

In the case cited the superior left lateral and right central incisors were to be supplied. A narrow band, or skeleton attachment, was accurately adjusted to the lingual surface of the remaining central and lateral incisors, with arms extending to each of the cuspids. On the band a hollow receptacle was constructed, partially filling the spaces of the teeth to be restored, with holes on the anterior wall to receive the long pins of bridge-work facings. These were secured in place on the attachment by bending the ends of the pins within the receptacle, which was then filled with cement, protected at the open end from the fluids of the mouth by amalgam.

Screw-posts having been previously inserted in the lingual surface of each of the cuspids and the central incisor, with corresponding holes in the band of the denture, the piece when finished is slipped over the pins, which retain it securely in position, similar pins in the teeth of the model having served as guide posts during the construction of the piece. By this novel method the natural teeth are neither cut nor banded, no gold appears at the labial surface, and the denture does not depend on cement for its retention.

In the most progressive days of Greek art and philosophy, work was supposed to be fit for none but slaves. Aristotle did not believe those who did manual labor entitled to citizenship. Since the coming of the carpenter's Son, who is the final authority in political economy, work has grown in honor, and has occupied a constantly enlarging place in society and in legislation. By teaching men to know God as their Father, He took out from all the foundations of society any ground for social caste or industrial despotism, so that now, more and more work is bearing fruit in the livelihood, in the physical comfort, and in the moral and intellectual development of all who work. *G. D. Herron.*

THE CARE AND DEVELOPMENT OF THE TEETH.

Dr. J. P. Broadstreet said in the late Mississippi convention: "I have been impressed with a feeling of shame and reproach at the contemplation of the sad havoc that has been played, the pains and aches that have been caused to the dear little innocents by failure on the part of our profession to give the proper attention to this subject. Can we, who pose as members of one of the foremost professions of the age, hold ourselves guiltless while we sit supine and indifferent, and see this destruction and ruin continue its direful course, and never raise our voice against it, and never take a step to stop this great evil. We shall not have met the obligations imposed on us by virtue of our profession, nor performed the duty we owe to the people, till we shall have exerted ourselves to our fullest capacity to impress on parents the necessity and importance of caring for the teeth of their children."

THE PUFF-BALL OR LYCOPERDON FOR HEMORRHAGE.

Dr. C. Brewster, Montreal.

It is said that when Cæsar landed in Britain the soldiers staunched their wounds with the puff-balls they found in the fields. In 1853, Dr. Benjamin Ward Richardson experimented with these fungi to stupefy bees before he robbed their hives, a custom in use centuries ago in England. Dr. Richardson found that, exposed to heat, the fumes produced anesthesia, and from 1853 to 1860 he thus narcotized more than one thousand animals. He also made himself unconscious by its use. He recommended its revival as a styptic in alveolar hemorrhage, but it did not become popular. Where the fibrin is in inefficient solution, and the blood itself is of feeble coagulating power, the vascular trunk will have feeble, contractile power, and hemorrhage is apt to occur after tooth extraction.

Some years ago experiments were performed in Montreal, by Dr. Beers, by placing kittens in a chamber, to the outer surface of which there was a small iron box perforated beneath, and having a pipe opening into the box above. After freely distributing the fumes through the chamber, a kitten was put in. In six minutes it was insensible; remained thus for twenty-four minutes, having its ears clipped and otherwise treated without consciousness, and afterward recovering and enjoying a good drink of milk.

If you inhale the fumes of the lycoperdon through a hookah pipe, letting the fumes first pass through potash water, to clear

them of carbonic acid, its effect is more lasting than chloroform. As a styptic in alveolar hemorrhage, its effect is instantaneous. By removing anything in the way of thickened blood from the alveolar sockets, and opening the cellular tissue integument which invests them, bits of the fungus can be easily pressed in with the finger, and a piece of cork, spunk, lead or even cotton placed on top of it, and the jaws closed, and the patient keep quiet, cool and erect. It is wrong to let the patient lie down, or to give any alcoholic stimulant, as the object is to quiet the system.

I have found the greatest virtue to lie in the genus *lycoperdon bovista*. The genus *giganteum* is the largest and easiest obtained; the *bovista* is small and scarce. The former is considered a distinct species, but the styptic properties of the *bovista* are much superior, containing a large proportion of phosphate of soda. The *bovista*, medicated with carbolic acid and camphor, removes objections to it, and makes it antiseptic as well as styptic.

It is noticeable that phosphate of soda was once largely used to arrest hemorrhage, and it appears that the styptic properties of the puff-ball are due to the excess of this substance.

CEMENTING IN A GOLD FILLING.—Dr. J. E. Davis says: "I replaced a contour filling in my own mouth several years ago by the following method, and the filling is still intact, though it is a central incisor, with but little chance for retaining grooves. I put on rubber-dam, cleaned the cavity well and partly filled with thin cement, pressing the old gold filling in place, and left till thoroughly set. Since trying the one in my own mouth, I have replaced others, and find them very durable. Sometimes it happens that a large contour gold filling may be displaced in the finishing-up process, which is certainly very discouraging to a dentist after hours of hard work and use of much gold. Sometimes they may be cemented in place, and be fully as durable as if they had never been displaced. As the gold exactly fits the cavity, no line of cement is seen. And the work is much more perfect than any other kind of inlay can be; and what a world of work it sometimes saves, to say nothing of the gold required in refilling."

RUBBER-DAM.—Old, weak rubber-dam may be restored, by immersion for five minutes in a weak solution of ammonia water. It will also relieve the rubber of its offensive odor, which is so objectionable to patient and operator alike.

D. E. Wiber, D.D.S., Washington, D. C.

CURRENT THOUGHTS.

CHRONIC ABSCESS WITH COMPLICATIONS.

Truman W. Brophy, M.D., D.D.S., Chicago.

It is not my purpose to describe in detail in this paper the methods to be pursued in the treatment of chronic uncomplicated abscess, for the treatment of such a condition is based on well established principles. It seems, however, that we may devote some time to the consideration of complications, and the best methods to be employed in making a diagnosis and outlining a course of treatment.

Acute abscess of a tooth is usually amenable to treatment, and is promptly cured. If, however, the disease becomes chronic and is attended with complications, we need to exercise our very best judgment in making a diagnosis, and in outlining and following the treatment required. Should a tooth having a chronic abscess fail to respond to the usual treatment, namely, cleansing of the canals, with the proper use of antiseptics and stimulants, we can rely on the presence of a complication. This complication may be the denuded apex from which the pericementum has been destroyed by the process of suppuration. The carious bone surrounding the apex of the root of a tooth gradually breaking down, and minute granules thus forming in a sac or cavity, may find their way to the surface through the fistulous opening that is established. This fistulous opening may not be visible. If an upper incisor, the fistula may extend into the nasal passage, and if a lower, it may make its way beneath the chin, or occasionally the fistulous tract may extend as low as the clavicle, and in one or two instances on record we find the fistula as low down as the nipple, the pus passing down the long tortuous tract to be discharged at the point mentioned. If it were an upper bicuspid or molar, the pus may find its way in the nasal passage; it may extend backward in the antrum of Highmore, and thus establish a complication which does not always yield promptly to treatment. It may extend back to the tuberosity of the maxillary bone and find its way in the sphenoidal fissure. The pus may from an incisor tooth, as has occurred in several instances in my practice, burrow backward to the anterior wall of the antrum, and find its way in that cavity.

From this complication last noted, the pus making exit in the antrum of Highmore, we may have still further the complication of filling this cavity with pus, the closure of the natural opening leading from the antrum to the nasal passage, resulting from continuous irritation of the membrane at this point, and then we may have an elevation of the floor of the orbit—a bone that is exceedingly thin and translucent—bringing on intense neuralgia from the pressure of the fluid against the infraorbital nerve, and finally the pus may penetrate this thin plate of bone in the cavity of the orbit, find its way anteriorly and make its escape just at the lower canthus of the eye. Such a condition, with pus escaping from the fistula opening from the lower lid of the eye, or even dribbling from the lower border of the eye, may deceive even the most skilled ophthalmologist. Again, if pus makes its way from the antrum in the nasal passage through a small fistulous opening, or through an opening which is not occluded by the process of inflammation and adhesion, the condition may be easily mistaken for suppurative nasal catarrh. Pus, in making its escape, usually follows the course which affords the least resistance, but not always so; for we find sometimes that pus forming at the apices of the roots of incisor teeth, instead of escaping from the anterior alveolar plate finds its way back in the cancellated structure of the superior maxillary bone, passes through the hard palate, either making a fistulous opening on the palate or elevating the periosteum, separating it from the bone, and forming a large fluctuating mass beneath this membrane; such a condition is dangerous. A bone deprived of its periosteum is in a critical condition for the want of nourishment which is furnished through the medium of this membrane. It, especially in persons of low vitality, is liable to become carious and cause a very serious complication. The reason why we have carious bone in some cases, and necrosis in others from apparently the same cause, is due to the degrees of vitality met with in different subjects. For instance, a strong, vigorous, healthy person, having an alveolar abscess form, may have as a complication caries of the bone if the condition becomes chronic, resulting from lack of care and lack of treatment, or improper treatment. If, on the other hand, a person of low vitality, one who is suffering or has suffered from specific disease, were to suffer from the same pathological condition, he, in consequence of a failure of the tissues to repel the advance of the inflammatory process, or to resist it, might have, and probably would have, the circulation overwhelmed, osteitis and stasis established, and necrosis of bone as a result.

Another complication, usually common in dental practice, is

an alleged pyorrhea. We have all of us been called on to treat cases which have been in the hands of others and treated for pyorrhea, when the suppuration seemed to be confined to one or two teeth—sometimes three or four teeth. The pus, which was supposed to be the result of pyorrhea, was not by any means caused by that disease, but was a discharge from an abscess down between the root of the tooth and the alveolar process, then discharging at the neck of the tooth, between it and the gum tissue.

Another complication and one which is attended with much pain is caused by partial death of the pulp. In exposure of the pulp at the end of the root from any cause, as from absorption of the gum and alveolar process, the apical pulpitis terminates—if permitted to take its course—in suppuration. If this exposure occurs at the apices, *e. g.*, of the buccal roots of an upper molar, we have as a result, eventually, death of those branches of the pulp in these buccal roots, while the branch supplying the palatal root may be still living. Then we have a flow of pus from the gums which is easily mistaken for pyorrhea alveolaris, and yet emanating directly from an abscess situated at the apices of the buccal roots of the molar tooth, while the continuous irritation of that portion of the pulp still living in the palatal root keeps the patient in constant pain. These cases are, in my judgment, more common than is generally realized. Indeed, we have cases where there is no marked absorption of the gum tissue or alveolar processes, where from caries a portion of the pulp may be devitalized as a result of continuous irritation, while another portion within another root may yet live. Then we have a flow of pus along the walls of the tooth and about the affected side, while a tooth may be sensitive when tested on the neck by the heat, or by any other method to ascertain whether it be sensitive or not, and the operator in consequence may be misled.

Still another complication of chronic abscess we have in frequent accumulations of pulp nodules, affecting a root within which is vital pulp tissue, while another root may be free from these nodules, the pulp tissue within dead, and an abscess at its apex.

I urge all to devote time when coming in contact with these complications to make a careful diagnosis, for in this procedure depends more than anything else the success of the treatment. Deformities, permanent physical infirmities, septicemia and loss of life are so frequently due to the complications of chronic abscess, that a fuller comprehension of the subject should be acquired. It is not difficult to apply remedies after we have made ourselves thoroughly acquainted with the condition requiring treatment, to treat diseases of this character properly. We must employ means

to keep the parts antiseptically clean, and while we cannot overestimate the value of antiseptics in the treatment of chronic as well as acute conditions, we cannot depend on agents that are solely antiseptic to promote the formation of granulations, and to establish the process of repair when new tissue is to be formed as a substitute for that which has been lost; hence the necessity of employing agents that will promote the formation of granulations. Stimulants are essential, even carrying them far enough sometimes as to cauterize the surfaces on which we expect healthy granulations to form. Antiseptics, germicides, etc., are capable of preventing, and, in some instances, arresting the formation of exuberant granulations and fungi, but now and then in surgical practice the milder forms of these agents are impotent when used for the purpose of establishing a new condition, namely, the destruction of extensive fungi and the promotion of the formation of healthy granulations, and thus aiding the process of repair.

Dental Review.

THE WRONG USE OF WORDS.

Editorial in International.

The most important use of language is in a direct translation of the idea in the simplest form of words attainable. It is a recognized fact that the best writers of the English tongue to-day, or at any former period, have been those using but few words of many syllables, and the nearer they have been able to express their ideas in simple forms have they been appreciated and regarded as models of style.

We have been impressed very often in professional reading with the fact that there was a positive need of a better training in this direction. We all have a tendency to a multiplication of ponderous words, as though the number of high-sounding syllables increased the force of the idea to be presented. Writings of a scientific character need above all others simple language. The difficulties that surround obscure subjects make this imperative, and yet how often is this plain rule violated by writers who load their language with technicalities new and old, to an extent that deprives the essay of much of its value. Words are useless if they cloud ideas, and nowhere is clearness of expression more needed than in professional writing.

Akin to this, and of more importance, is the use of simple words in teaching. While it is true that teachers are born and not made by pedagogic training, there yet remains the possibility

of producing a satisfactory teacher out of the ordinary professional man, provided the latter is absorbed with the subject and will avoid the error of over-phasing, not inaptly expressed by having "digested a dictionary."

The use of technical terms is necessary within well defined limits, but these may be easily overstepped, and the writing or the teaching become a burden to the reader or the auditor. An excellent rule to follow in addressing a class is never to make use of a technical word if another can be found to explain the idea. This given, and firmly engrafted on the mind, it may be followed by the proper word. A valued friend and teacher always stops to explain the meaning of a technical term. This to our comprehension is not the best course to pursue. Definitions are rarely of value, as all know who have undertaken the study of a language by the aid of a dictionary. The thought must be absorbed before the word can be comprehended. Hence the folly of showering a class of young men with terms beyond their powers to utilize, and expect to have them understand the subject-matter of the lecture. This is too often the mistake of professional teachers. The rule should never be forgotten to make the subject but a degree above the most ordinary mind present. Complex problems in our specialty, as in all other branches of medicine, are sufficiently difficult without increasing this by a redundancy of technical forms.

The evil is one rapidly growing in our literature, and it seems a proper time to call attention to it, especially to those fresh from college life who are apt to imagine that learning is best expressed by the use of the longest words, and that unless their ideas are thus clothed the essay will fail of proper recognition. This is a common error not by any means confined to the class mentioned.

The tendency to ostentation in writing is another defect. Use of foreign words, or an occasional Latin or Greek phrase, better expressed in English, and which rarely represent in their use solid learning, add nothing to the value of an article, nor is the reader better able to understand, by their presence, the ideas the writer hopes to convey to the mind.

Allied to this is the search for a style. This has been the bane of many young and ambitious writers. Style is the natural expression of the individual improved by culture. It would be as sensible to expect to acquire a good voice by searching among the singers of the world, as to hope to acquire a correct style by reading the masters of word-expressions in any age. As the voice can be improved by cultivation intelligently applied, so the ability to embody thought can be enlarged and improved by cultivated practice.

IMMOVABLE BRIDGE-WORK.

Dr. E. A. Bryant, Washington, D. C.

In the immovable structure we have and always will attain the best results, from the simple fact that it is not only immovable itself, but it retains its abutments in an immovable position, distributing any unequal strain brought to bear on it in any direction, equally on all its abutments. Lateral strains are the most to be feared, and are what destroy the abutments, should they not be strong enough. A bridge extending from the twelfth year molar, to the first bicuspid or cuspid, unless favored by an unusual bite of the antagonizing teeth, will almost invariably fail, the abutments becoming loose under the lateral strain, while if it extends beyond the cuspid as far as the central incisor or farther, these latter abutments serve to break the lateral strain, and such a bridge, properly made and articulated, rarely fails. This same fact is demonstrated in bridges of a full denture attached to only four abutments, *viz.*: two cuspids and a molar on each side of the arch. If the full denture is attached to a wisdom tooth on each side in the superior arch, it is best to solder in a piece of iridio-platinum plate, fitting and slightly imbedded in the tissues across the roof of the mouth and soldered to the wisdom crowns, making it stiff enough to thoroughly brace the bridge at this point, so that any lateral strain will be distributed instead of concentrated on one side or the other. This is, of course, impossible where the denture is in the lower jaw, but it must be arranged for by strengthening the denture at its arch from cuspid to cuspid, and where the bridge joins the arch at the cuspids. Perpendicular strain has no ill effect on the abutment crowns if these abutments are firm when the bridge is inserted. I make no exception to this rule as regards the strength of the different jaws met with, since nature always provides strong teeth in jaws of massive strength. You will notice how plainly this fact is shown in excessive abrasion, the "bite" being square down, and the greater the abrasion and the shorter the teeth become, the stronger they are found to be imbedded in the sockets. In these the lateral strain is removed altogether, or nearly so, and nature resists the perpendicular strain by strengthening the sockets. The only reason for the "give" or slight motion which can be detected in the fully-developed teeth, and which movement is at times used as an argument against the immovable bridge, is that the lateral strain is neutralized by this slight cushion action, the teeth returning to their normal position the moment the strain is removed, and that it is nature's brace and one which

must be duplicated by mechanical means whenever these teeth are replaced by artificial substitutes. If we look after the lateral strain on the abutments used, nature will take care of the perpendicular. This statement is borne out by the fact that a loose tooth used as one of four or five abutments in a bridge, and securely held quiet, all lateral strain being removed from it, though it is subjected to the same perpendicular strain as the other abutments, becomes as firm in its socket as formerly in its normal condition. Did not nature have this power of resistance, the greater strain always being perpendicular in the process of mastication, this loose tooth would become more loose, and by not giving resistance at this point the leverage would be so great that it would cause the bridge to tilt. Or, in other words, to have the same action as is found in the abortions called "extension bridges," the extension acting as a leverage and virtually pulling the other abutments out of their sockets, distributing a lateral instead of a perpendicular strain to these abutments, thus accomplishing the very result we have to guard against mechanically, though in a different direction. Nature endows the parts of the body only with such strength of tissue as is required to allow normal action, giving no organ more than is needed for the function it is designed to perform, but endowing each part with a reserve force with which to resist abnormal action, as well as to be abnormally developed in some directions, as in the athlete, the artist, the sculptor, the mechanic, and I might add, the dentist. The whole structure of man, so far as the articulations of the bones of the body, limbs, head and feet are concerned, in their normal condition, is built on the very finest of mechanical lines, as well as are the "braces," the muscles, and each part is endowed with reverse functions for the resistance of excessive strain on any part, and all we have to do is to study these mechanical effects.

With these mechanical facts to judge from, as well as a personal experience of eight years with immovable bridges, I take the position that it is the "artificial denture par excellence" when properly constructed and inserted, care being taken for the strength of the parts and materials used and their relations to the tissues, and for all lateral strain; nature will care for the perpendicular when required. If these mechanical principles are followed, failure of immovable bridges from mechanical reasons will be an impossibility, leaving only bad cement, faulty insertion, systemic causes, and improper care by the patient in not keeping it clean, to be contended with, and failures of this kind pertain not only to bridge work, but to every operation known to dental science.

DENTAL NOTES.

Dr. D. E. Wiber, D.D.S., Washington, D. C.

Keep the finger nails well trimmed and clean.

See that your engine burs are sharp and free from débris.

Soft teeth require a soft filling material in contact with tooth-structure.

Read medical and dental literature in spare moments, thus keeping abreast of the times.

Copper amalgam should never be inserted in hypersensitive teeth, nor over exposed pulps.

Aristol, an excellent office preparation, should be kept in dark-colored bottles, well-stoppered, as it deteriorates on exposure to light and air.

Primary stomatitis is generally the result of thermal, mechanical or chemical irritants.

For your patients wearing artificial dentures or bridge-work, prescribe listerin for its antiseptic and prophylatic properties.

Nitrate of silver may be used advantageously in deciduous teeth, or in adult molars where imperfection in formation of enamel has resulted in superficial decay.

The want of pride and appreciation is often the cause of uncleanliness in the mouths of our patient. The necessity of cleanliness is not sufficiently urged as it should be, by the dentist. Students in every medical and dental school in this country—in the world—should be taught the important rôle played by the mouth in perpetuating and propagating disease germs.

Electricity, as applied in dental practice, has a large and boundless field, and is destined to become exceedingly popular, when its principles have been thoroughly mastered and are better known by the progressive dental surgeon. The further he extends his researches, and delves in its mysteries the more engrossed is he in its subtle power.

The cause of the pits and checks so often exhibited in the enamel of teeth, has not as yet been fully demonstrated; many have ascribed them to diseases of childhood, and are inclined strongly to this theory; but if this is true, why do they not appear all over the enamel? The enamel is all formed at the same time, and by the same process—calcification by conversion, Tomes. The theory which appear most correct and gaining ground is, that of improper assimilation of the phosphates and carbonates in the food, and the consequent lack of these elements in the teeth.

Medical Brief.

FILLING CERVICAL CAVITIES.

The form of the cavity for retention of the filling, and ample extension of the cavity for the prevention of recurrence of decay, are the two main items in this class of cavities to secure duration of fillings. Other factors belong to the method, as contour and contact, triangular form of the interproximate space, secured usually by wedging or pressure; and the adaptation of the filling material to the restoration of form. Let us particularize a little. To prepare a cavity, always cut till you come to something good at the cervical margin, even if it should be necessary to cut all the enamel away at the cervix. Cut wide bucco-lingually, extending to the angles of the cusps and including them if thin or of poor texture.

The cusp angles are not of much importance in supporting the filling by this method of anchorage, and should be cut away till the strongest possible border can be secured, and restoration be made with the filling.

In December issue I notice an item on "Sweet Breath." I see nine different articles recommended, and I know they are all good. But why use any of them when listerin will absolutely kill every bad odor of the breath? Ten drops in an ounce of water will do finely. Half a teaspoonful in an ounce of water will destroy any odor from catarrh, decayed teeth or a bad stomach. Use it as a gargle, and hold it in the mouth for a minute. In stomach odor, swallow a little of a weak solution.

And, Mr. Editor, a little whisper in your ear. Listerin will kill the odor of *good* tobacco in the breath, so that your most fastidious lady patient will swear you don't use it. *Try it.*

H. F. Gleason, M. D., Malden, Mass.

Dr. Molyneaux, says: Vulcanite work has done more to ruin mouths than anything else, not so much on account of the vulcanite, but the careless methods of using it. Vulcanite is an excellent base when properly made. I believe that much of the bad results from vulcanite are due to the interference to nutrition which follows the insertion of many vulcanite plates made directly over a plaster model. The plate is too small for the mouth, and the tissues must be cramped in order to get the denture in place. Another trouble, "rubber sore mouth," I have often seen corrected by simply making a vulcanite plate with self-cleansing surface, such as is obtained by vulcanizing against thick tinfoil. Putting on the tinfoil is a very simple process. I have been accustomed

to use both Ashmead's and Nye's tinfoil. I suppose any other would do as well. Take any form of model you like and No. 40 tinfoil or No. 60. You put reliefs on the model wherever indicated. You take shellac of the consistency of thick syrup, and cover the model, or that part of the model you want the plate to cover; then you take your piece of tinfoil, one sheet, that is No. 40, laying it over the model. Take a stencil brush with quick successive taps and stencil the foil till every portion is in contact with the model, then with a piece of chamois rub over a couple of times till smooth. If you use a burnisher you can not get it down for a long time, and also get it full of wrinkles. You trim off the excess and then take your burnisher and go around the edge, and if there be any wrinkle, as there might be, rub it down, and if you have any impression of the stencil brush, the rubbing with chamois brings it down perfectly to the model, and you have a smooth surface. If you use a thinner tinfoil than 40 it does not act as any protection to the model. Putting your shellac on first and then taking your sheet of tinfoil and going down over the edges in that way, you see it is over there perfectly smooth, and by rubbing it down with a piece of linen or something you have handy, it gives a surface on which you can vulcanize. The use of the stencil brush is an important thing. If you use thin shellac it will not hold the foil.

Register.

FLOOR MOSAICS OF WOOD PULP.

Sawdust or woodflour is soaked in shellac varnish and then thoroughly dried. It is then mixed with very thin cement made of cheese whey and slacked lime. When the mass has become nearly dry, but yet moist, the mixture is molded with heat and pressure, whereby the shellac is softened and the cement is rapidly hardened, and within a few minutes the block may be removed from the mold. These blocks are far less susceptible to any change of temperature or moisture than any natural wood.

The natural color of the woods may be preserved by selection of materials, or suitable dyes dissolved in alcohol may be mixed with the material.

Power and Transmission.

I have been using salol almost exclusively for root filling, and, so far as some ten months of trial can prove, with uniform success. A solution of sodium peroxid is first used to saponify fatty material, and to dissolve and drive out the contents of the tubuli. This is neutralized by a weak solution of sulfuric acid followed

by thorough drying with alcohol and hot blast; then with a pair of long-pointed dressing pliers a portion of crystals is taken up and held above a small flame till it becomes fluid. The closed points are then placed as high up the canal as possible, and slowly opened; the fluid runs up the dry canal. An iridium broach warmed is used to pump the salol to the apex, and in the still fluid material a point of metal or gutta-percha is thrust. This is used in the event of reopening of the tooth ever becoming advisable. By warming the point it may be withdrawn, and with it the melted salol, rendering access to the apex easy. Experimenting with teeth out of the mouth has demonstrated some difficulty in removal where a central mass of other material has not been used.

Dr. Burchard.

CLEANLINESS.

The importance of keeping the mouth free from remnants of food and masses of tartar is important. It is no exaggeration to say that ninety-five per cent of all dental troubles are the direct outcome of uncleanness. When particles of food are allowed to accumulate on and between the teeth, fermentation takes place, and decay is the result. Or putrefaction may ensue, and the mouth become a very center of disease and infection. If the mouth could be kept perfectly clean and pure, teeth would never decay, but as this is impossible, it only remains for us to clean the teeth thoroughly after each meal, that the particles of food may be as perfectly removed as is practicable.

TARTAR.—This is a deposit of animal and mineral matter, precipitated from the fluids of the mouth on the teeth. Sometimes it accumulates in such large quantities as completely to incrust them. It imparts to the teeth a greenish, yellowish, darkish, and sometimes a white color. Its effects on the teeth are always injurious.

1. It makes the gums spongy and sloughy, and causes them to bleed at the slightest irritation.

2. It produces suppuration of the gums, and pus accumulates, sometimes in considerable quantities, making the mouth exceedingly unwholesome.

3. It forces the gums from the teeth, and working its way between them produces such an absorption of the bony sockets as to loosen them.

4. It vitiates the saliva, and as this fluid is essential to digestion, the stomach is deranged and the entire system is disturbed.

5. It imparts a disagreeable odor to the breath. This is one of the most disgusting features of a filthy mouth, and makes the sufferer obnoxious.

If, then, one would preserve his teeth and avoid these diseases, he should keep them free from decaying food and tartar, by the most unremitting attention. This cannot be done by merely polishing the exposed surfaces.

When once allowed to become encrusted with tartar, no one can thoroughly clean his own teeth, because he can neither see where the masses are, nor can he use the proper instruments for their removal. The work can only be done by the dentist. Everyone, then, should visit his dentist at least twice each year, for cleaning and examination of his teeth.

We often hear the question asked, if cleaning the teeth with instruments does not injure the enamel, or if they are not so irritated as to cause disease, and perhaps instances are cited in which the teeth of a friend have, in their imagination, been led to decay because of the work done on them by some dentist in cleaning.

It is undoubtedly true, that when teeth are cleaned cavities of decay that were masked by tartar are uncovered, but the cause existed before.

Neither the medicines nor the instruments employed by a good dentist will, in any case, injure the teeth. No respectable practitioner would employ any remedies that could be harmful. The instruments are of the finest character, while the enamel is too hard to be easily abraded. The pain complained of is caused by the removal of the tartar that has been allowed to accumulate beneath the gums, and which had forced them from the necks of the teeth, leaving that portion bare and exposed. A few days will accustom them to the changed condition, when the irritation will subside.

The decay of which the patient complains was not caused, but revealed by the cleaning. It would have soon manifested itself, as the coatings of filth and tartar had been silently doing their work of destruction, and the cleaning, far from inducing the decay, simply exposed its existence, and warned the patient to check its further progress.

After the teeth have been thoroughly cleaned by the dentist, to preserve them in this condition the patient should wash and polish them frequently with a powder or mouth-wash, using a soft brush. A silk thread between the teeth should also be used.

Ex. from Bell's Teeth and Mouth.

HYDROGEN DIOXID.

Henry Leffmann, M.D., D.D.S.

Hydrogen dioxid was for a long while a chemical curiosity, known only to a few special workers. I remember how, as a beginner in chemistry, I read with interest in one of the larger manuals the descriptions of the ingenious but tedious process by which Thénard prepared the substance, and also how much interest was awakened by its curious and exceptional properties.

Though we are still but little familiar with the pure substance, the dilute solution is now so well known that we are able to study all its important properties and utilize its valuable actions.

For several years I have kept a desultory analytical watch on the commercial solutions of hydrogen dioxid. I published in the *Medical News* two years ago a short paper in association with Dr. William Beam, giving assays of the samples of the brands commonly sold. The examination was suggested to me by the editor of the *News*, and grew out of a paper by Dr. Wallian. In the examination a process of assay was used which had been devised by Mr. Marchand, generally accepted, and considered reliable. Dr. Squibb, however, who at one time used and advised the method, has since shown that it exaggerates the amount of available oxygen. Nearly two years after this paper was published, one of the firms, from which samples had been obtained, wrote me a long letter objecting to the results. I thought that it would be a good time to reinvestigate, and accordingly published in the *Medical News* the results of a much more extended series of assay, covering twenty-one samples and including various tests.

The members of this Society are, I think, mostly familiar with this paper, and I need not refer to it further than to say that it showed that while there are several excellent brands in the market, there are also many poor ones. The reputation of a house is no guarantee, nor is the price. Two samples from Merck's contained almost no dioxid. A sample which claimed as a special merit the small amount of fixed solids showed the highest in the list. Recently my attention has been called to an English brand much in favor with some physicians. I obtained a fresh sample (four-ounce bottle, retailing at one dollar), and found it to be of poor quality.

At the time the investigation of the twenty-one samples was made, I had several prescriptions calling for one ounce of hydrogen dioxid put up in different parts of the city, and I also obtained samples from several of the dental depots. I was so struck

by the inferiority of the latter set that I thought it well to bring the matter before this Society, but owing to my not communicating my desire to the Secretary soon enough, it could not be placed on the program till after the article had appeared. Though a mere mention of the results in the direction was made in the *News*, I preferred to wait before reading a paper.

Hydrogen dioxid solution should be a clear fluid, containing sufficient amount of the dioxid to give ten volumes of oxygen when completely decomposed. Fifty cubic centimeters of it should not require more than about five cubic centimeters of decinormal sodium hydroxid to neutralize the acid present. It should keep well in a moderately cool atmosphere. On opening a fresh sample no distinct explosion should occur, and when poured in a breaker very little effervescence should be noted.

The assay for volume strength is made by means of a solution of potassium permanganate. I need not describe it here.

Pyrozone, which is most expensive, ten-volume solution, in this market sells for fifty cents for four ounces, but the above samples are sold at the rate of sixty cents for four ounces. A ten volume solution of excellent keeping quality is made, and may be obtained at retail at about sixty cents a pint. Such a solution will keep in an office for weeks without appreciable loss if a little care be taken not to place it in a warm corner.

There is no necessity for buying the material in one-ounce bottles. Proximate assays are easily made. A solution of potassium permanganate will last a long while, and but one cubic centimeter of a given sample of hydrogen dioxid is required for the test. If this be thought too much trouble, guaranteed articles can be purchased.

International.

In adjusting the dam, press to place with a pellet of cotton moistened with sandarac, and you will oftentimes avoid the necessity of ligatures, and avoid injury to the gum. The sandarac also prevents leaking.

Dental Journal.

Twenty years ago I extracted a tooth for a man "without pain," that is, he said it did not hurt him. This was the way it was done: I had put a large molar forceps well down on a lower molar for the purpose of extracting it, when he told me to "hold on." I answered him that I should certainly do so, and continued to pull. He got mad and attempted to strike me. Failing in this he placed his foot against the window casing and pushed the chair over backward. Just as his head struck the floor the tooth came out. He assured me the extraction was without pain.

C. S. Talbert.

SULFURIC ACID AND PEROXID OF SODIUM.

F. T. Van Woert, M.D.S., Brooklyn, N. Y.

Since the introduction of sodium peroxid by Dr. E. C. Kirk, three years ago, I have met with great success in its use, as well as in making the solution. I seem to have been more fortunate than many others, as I am constantly in receipt of communications stating that the writers have failed utterly in their efforts to accomplish results like those claimed for the remedy. The sulfuric acid which was recommended by Dr. Callahan at Asbury Park, last August, I have found so valuable in bringing to light nerve-canals that would never be found were it not for its use, that I embrace this opportunity to spread the glad tidings, with the hope that others may be profited by it as I have. It is generally conceded that one of the most difficult and uncertain operations which we are called on to perform is that of opening and sterilizing roots, and in a great many cases it is utterly impossible to accomplish that end, and the result is the loss of many valuable teeth.

Dr. Callahan recommends a 40 to 50 per cent aqueous solution, as follows: "Let us suppose we have an inferior molar tooth in which the pulp has been destroyed; we adjust the rubber-dam, open the pulp-chamber thoroughly, take an old discarded broach, twist a little cotton on the end, bend the broach to a right angle so it will reach well down in the cavity, place the broach in a suitable handle, and by means of the broach and cotton place directly on and above the dead pulp a drop or two of a 40 to 50 per cent aqueous solution of sulfuric acid. The solution, by a process of dehydration, will cause the pulp to shrink and toughen so that it can with comparative ease be removed. Now, by means of the broach and cotton, place a drop of the solution over the entrance of each canal. Sometimes it will be necessary to sink a little well or depression at the mouth of the canal, to get the acid to stay where it is wanted.

"Take a No. 5 Donaldson nerve-canal cleanser, bend it to a suitable angle, cut the shank short with nippers so the broach will fit up close to the handle and be rigid and strong; then with a pumping motion begin to enter the canal slowly and carefully. The acid will precede or follow closely the fine broach and destroy all septic matter it comes in contact with. Proceed till the patient notifies you of a sensation which is similar to that felt when chloro-percha goes through the foramen; treat all of the canals in the same manner. I say all, because sometimes you will find what appears to be four distinct canals.

" Usually three canals will be found. The posterior root will have one broad canal; the anterior root will nearly always show what seems to be two canals.

" By this time the solution will be so charged with disintegrated tooth and pulp-substance that it will hide the canals from view. Now, by means of a Dunn syringe, fill the cavity with a saturated solution of bicarbonate of soda; this, when brought in contact with the acid solution, liberates carbonic acid gas in such quantities that the effervescence will carry all the broken-up tooth and pulp-substance out of the canal, out of the tooth on the rubber-dam, leaving a deposit of bicarbonate of soda lining the whole tooth. This can be removed, if desired, by a little sterilized water, alcohol, or peroxid, either of which will leave the canals white and clean.

" If we desire to make the canals larger, place more acid in them and use a larger broach till the canal is as large as wanted; then cleanse again with bicarbonate of soda; dry the canals thoroughly by paper points, alcohol, hot air, etc., and you have the cavity and all the canals thoroughly opened, thoroughly clean, thoroughly aseptic, and you can proceed to treat or fill, as you may choose."

I have been using this preparation as here described, and find the claims made by Dr. Callahan for it precisely as he has stated, to wit:

1. The operation is safe, because the action of the acid is self-limiting on dentine.
2. It is a pronounced germicide.
3. The acid acts on deceased tissue with far greater vigor than on healthy.
4. The destroying of the diseased tissue in this way leaves a fresh aseptic surface.
5. An aseptic wound will heal itself in any part of the body if properly closed.
6. Dr. Callahan claims that the acid softens the dentine a very short distance.

In the use of a bicarbonate of soda solution the acid is neutralized, in doing which carbonic acid gas is generated in sufficient quantities to carry off the débris from the root-canals.

Now, do not understand either Dr. Callahan or myself as claiming the use of sulfuric acid and soda to make it possible to open all root-canals, but credit us with the conviction that by their use many hopeless cases are mastered and hundreds of teeth saved which would otherwise be lost.

When you are not successful in your attempts to thoroughly

cleanse the canals, place in the pulp-chamber a saturated solution of sodium peroxid and seal the crown from twenty-four to forty-eight hours; then remove and wash with warm water, after which fill in the usual manner, with the assurance that generally you will have no further trouble. But to obtain these results it is necessary that every detail is followed in the making of the solution.

First, the peroxid must be powdered in a mortar, as it is not fine enough as purchased to add to the water without a chance of spoiling the solution before its completion.

Dr. Kirk explains this as follows: "If the solution be made hurriedly by the addition of much powder to the water at one time, the evolution of heat due to the energy which attends the combination produces a rapid elevation of the temperature of the solution, which causes a decomposition of the peroxid, a loss of its loosely combined extra atom of oxygen, and the resulting solution is little more than a solution of sodium hydrate, or ordinary caustic soda, which is inert as a bleaching power. To obviate the rise of temperature and consequent decomposition of the peroxid, the solution must be made slowly."

To make this solution, take a common tumbler about half full of distilled water, place it in the center of a good-sized pudding-dish, and pour all the cold water around it possible without floating the glass. Add the sodium peroxid in very small portions, about what could be taken on the point of the large blade of a pocket-knife, dusting it in the water slowly to cause as little agitation as possible, and this amount should not be added oftener than once in a half-hour, being careful to have the sodium peroxid finely powdered; this to be continued till the preparation begins to look opaque as powder is added. Let it stand over night, and it is then ready for use. It will then be a prompt bleacher and sterilizer.

The general impression is that sodium peroxid is for bleaching only, while it is the most valuable preparation I have ever found for the treatment of dead teeth, if used as described.

The question has been raised as to whether this solution does not disintegrate tooth-substance. I feel safe in saying that it does not, having used it very extensively the last three years without once giving trouble. The preparation can be kept in a glass-stoppered bottle for a long time. Keep it in a cool place.

To preserve the powder, screw the top of the can down tightly, and run between it and the outer rim a little base wax melted so that it will barely pour. You can remove the top at any time by simply passing the point of a knife through the wax, close to and around it.

CAUSES OF CARIES.

Judging from the questions constantly asked the dentist, it is no exaggeration to say few people have a clear conception of the causes which lead to decay of the teeth.

Chief among them is the fermentation of particles of food lodged between the teeth, or in their pits or depressions, during mastication. When, through carelessness or indifference, these deposits are not removed, under the influence of the warmth, moisture and the microbes present, fermentation, or chemical change takes place and an acid is generated, and this dissolves the enamel and dentine, leaving a cavity to grow larger and deeper.

The dentine is of a tubular structure, and in these tubules the microbes which constantly exist in the mouth penetrate, where they continue their destructive effect till the tooth is completely destroyed.

Microbes are minute vegetable organisms, some of the many species of which are so small that they are only visible under the highest powers of the microscope. They are the cause of a large class of infectious or contagious diseases, and between them and the body there is a constant struggle.

The process of fermentation is of itself but the growth and multiplication of these minute organisms, and in this process of their life-history they produce the acids and other poisonous material which make them so fatal to mankind. Their number is inconceivable.

These are the direct causes of decay of the teeth. But there also exist indirect, or contributing causes, and these may be anything which will lower the general tone of the system, and make it less able to resist the action of deleterious agents.

Among these secondary causes producing decay, may be mentioned any protracted sickness, the lack of out-door exercise, excessive study, anxiety or worry, which undermine and weaken the system. When the body is ill, no one organ can be said to be perfectly sound.

The teeth may be crowded or depressed, or there may be fissures which offer a ready means for lodgment of food. The walls of the teeth may not be dense, and their power of resisting decay may be very weak; or the food may not contain the necessary elements for nourishing the teeth, and hence the work of repairing the wear and tear of daily use may be but poorly accomplished.

Again, there may be a hereditary tendency to decay. That

our ancestors suffered from any special ailment does not necessarily demonstrate that it will be reproduced in us, but it is probable that the same debilitating conditions will be inherited. Their consequences can, however, be avoided by proper and unremitting care. These causes are constantly at work, producing decay of the teeth and forming minute cavities, through which the decay rapidly progresses till the living matter of the tooth is reached. Unless this is checked, the tooth will be totally wrecked; even if it be not wholly destroyed, it will be so badly decayed that it will threaten the welfare of the entire dentition, and therefore it may become necessary to extract it.

V. C. Bell, in Teeth and Mouth.

ALVEOLAR ABSCESS.

Dr. N. Pearson says: "We do sometimes meet a case where there is fistula without an apical opening, or if there is one we are not able to find it, and no remedy can be forced through without drilling. In such a case we will find a broken Morey drill made sharp by stoning two sides to a cutting edge, or by using the regular Morey cutter very effective, using care in choice of roots to be opened, or such as are accessible to straight drills, and open them only at the apex. In dealing with roots of this kind I have been able, especially in inferior teeth, to force a passage by warming gutta-percha and pushing it into the chamber and canals with the tip of the forefinger or thumb, or an instrument quite as large as the cavity, thus making a strong piston force.

"In still other cases where we have a curved root, and in consequence a liability to make a side issue or other good reasons for not piercing the apex, by using a syringe with hydrogen peroxid and getting as near the seat of the abscess as possible through the external opening, and a very mild pressure on the piston, we may be able to persuade the contents of the sac to imbibe sufficient of the antiseptic to effect a cure. There is still another way of getting at an abscess, which for some reason we are not inclined to apply other means of remedying, and this is through the process: By using cocain or other local or general anesthetic, or by proceeding without these aids. The operation is not very painful, and is soon done with. In doing this a sharp fissure drill in the engine may be rapidly run over the end of the root, completely severing the connection between root and sac, followed by any good antiseptic and soothing remedy thought best. Cut, and in a few days all trace of abscess disappears."

Dominion Journal.

MOUNTING LOGAN CROWNS.

J. W. Heckler, D.D.S., Buffalo, N. Y.

For the central and lateral incisors it is preferable to mount the crown without a band, and my method is to prepare the root in the usual way, but to cut the labial side just a little beneath the gum margin, leaving the palatine portion as long as the judgment of the operator dictates. Select a crown that will not need any grinding on the cutting edge or the sides to make it fit, as it always impairs the beauty of a Logan crown to cut the surface. Also be extremely careful to select a crown with a neck similar to that of the root. This being done, grind the crown to as perfect an adjustment to the root as possible, taking care not to grind the platinum pin, as it would materially impair the strength of the crown. If the end of the root has been properly treated and filled, it is now ready for the final adjustment of the crown.

Take non-cohesive gold foil No. 4, fold it from 80-100 thickness, punch a hole in the center with a dam punch large enough to admit the pin, place the pad of foil on the crown, trim the ragged edges almost to the sides of crown, remove and place some thin cement in cup of crown, put pad back in place, tilt patient so the cement can be placed in root canals and all the air be expelled, otherwise the air acts as a cushion and keeps crown from going to place. All this being accomplished, place the crown in position, put a soft pine stick on the cutting edges of crown, and give a few sharp raps with the mallet to drive out all surplus cement and to condense the foil. Keep the crown firmly in place for a few minutes to prevent any movement, and it is advisable to have the patient remain a half-hour to allow the cement to thoroughly harden. Then burnish the gold foil hard around the joint and finish with disks and strips as you would a filling.

A crown set in this way does not show any cement whatever, and it makes a more perfect joint than is possible by any other method. It leaves no shoulder for the lodgment of food, is perfect in shape with the root, and hermetically seals the joint. *Digest.*

The following powder, containing nothing deleterious, will excellently answer the purpose for which it is intended :

Bicarbonate of soda.....	½ ounce.
Precipitated chalk.....	2 ounces.
Pulverized orris root	1 ounce.
Pulverized castile soap.....	1 "
Flavor with peppermint or wintergreen.	

Dr. V. C. Bell, in Teeth and Mouth.

EUCALYPTOL AS A LUBRICANT.

Dr. C. N. Johnson, Chicago, Ill.

We have no pet hobby to advance, but use gutta-percha points as so often described. The lubricant employed in advance of the points is a solution of gutta-percha in eucalyptol instead of in chloroform. Eucalyptol is less irritating than chloroform, and the solution may be kept in a bottle with less evaporation. The criticism may be made that the failure to evaporate rapidly is an argument against the eucalyptol solution, but in a practical use of it this objection is invalid. A very small quantity is used, merely enough to lubricate the canal, and the cone of gutta-percha is pressed in it with gentle but prolonged pressure, till all excess is forced up alongside the cone, and is wiped out with a pledget of cotton.

In this connection it is well to state the necessity of using a warm instrument in pressing the cone to place, so that the gutta-percha is somewhat softened. All inequalities in the canal will be more perfectly filled in this way than with a cold cone. The use of the eucalyptol solution in this manner for several years has seemed to indicate that there is less likelihood of the temporary soreness so often complained of by operators who use chloro-percha. Chloroform is an irritant, and the apical tissues surrounding some roots are so susceptible of irritation that the slightest disturbance, whether with medicines or instruments, is likely to cause trouble for several days, if not longer. It has been the rarest exception with me in recent years to have any complaint of soreness after root-filling. _____

Cosmos.

Fish bones and pins are liable to be caught in the pillars of the fauces, or in the tonsils, or may be fixed transversely across the pharynx. They cause much pain in swallowing. If possible, try to search the foreign body by the laryngoscope, and then to grasp it by suitable forceps or by the finger nail, while the pharynx is illuminated. This is a safer method than the plan of feeling for it with the finger without a light, and risking its passing down in the larynx. The tongue must be well pulled forward with a sponge cloth and the patient induced to continue breathing regularly, after first drawing a long breath. If the object is beyond the reach of a curved forceps or of the finger, it may be removed by the expanding horse-hair extractor or coin-catcher. If these methods still fail, first without chloroform and afterward with its use, then it is necessary to perform pharyngotomy.

J. C. Howie, in Glasgow Medical Journal.

BRAINS VERSUS LUCK.

Every mechanic, says the *Sanitary Plumber*, can call to mind certain men in his particular line of business who seem to succeed with little effort in undertakings where others fail. This class of men are usually spoken of by their friends as being lucky; as having natural talent; as being to the manner born, etc. None know the fallacy of these popular suppositions so well, however, as do the successful men themselves. The cases are rare where successful men would not have been equally successful in lines other than those they follow, because energy is the power that bridges difficulties. Brains are certainly an important factor, and while brains cannot be purchased, they can be developed by study and practice, but with the largest equipment of brains success does not follow, unless there be application, industry, and energy. On the other hand, industry and energy often go far to supply deficiencies in talent and brain power. Probably the highest compliment that can be paid to a mechanic is to tell him that he performs difficult work with ease, but no words appeal so little as these to the ears of men who have spent hours in accomplishing what the uninitiated think requires but a few moments' application of "natural (?) talent."

Scientific American.

ELECTRICITY FROM ARTIFICIAL TEETH.

A curious case has just been recorded in which an electric current was found to be generated by a plate of artificial teeth. A patient consulted his doctor on account of a severe pain in his tongue. But the sufferer was assured that there was nothing the matter. He then paid a visit to his dentist, who informed him that his teeth were perfectly sound. Being, however, dissatisfied, he called on an electrician whom he knew, and asked him if it were possible that he could have any electricity in his mouth. On examining the teeth, his friend found that two metals were used to fix them to a composition plate. To these metals wires were then attached and connected to a galvanometer. Then the teeth were replaced in the patient's mouth, and the metals moistened with saliva. No sooner was this done than the galvanometer showed quite a large current from so small a source—enough, it is stated, to cause ulceration and severe pain when long continued on so sensitive an organ as the tongue. The plate was covered with an insulating varnish, and thence-forward all the trouble ceased.

Literary Digest.

LABOR GOOD FOR DELICATE PEOPLE.

Sir Andrew Clark, in Journal of Hygiene.

Labor is the life of life. And especially is it the life of life to the delicate. When any organ is sick it is then truer than in health that even in sickness and delicacy it is better for it to do what work of its own it can, provided it can do it without injury. And I can say to you from a considerable experience in consumption, that those who have got on the best have usually been those who have occupied themselves the most. I never knew my own parents. They both died of phthisis.

At the age of twenty-one I myself went to Madeira to die of the same disease. But I did not die, and on coming back I had the good luck to get in this great hospital; and in those days they were not very well pleased to have Scotchmen coming to London to occupy such appointments. The members of the staff had heard that I had tubercles, and they wagered one hundred to one that I would not live six months at most. The reason given for this was that I ate and worked too hard. I got the appointment. Thirty-eight or thirty-nine years have gone by since that time, and it is all the other doctors that are gone. Only I am left here on the staff—an old gentleman—not dead yet.

Worry is killing. It is bad management that kills people. Nature will let no man overwork himself unless he plays her false, unless he takes stimulants, works irregularly, smokes much, or takes opium. If he is regular, and obeys the laws of health, and walks in the way of physiological righteousness, nature will never allow him or any other person to work too hard. I have never yet seen a case of breaking down from overwork alone, but I admit that it is necessary above all things to cultivate tranquillity of mind.

Try to exercise your wills in regard to this—for will counts for something in securing tranquillity—to accept things as they are and not to bother about yesterday, which is gone forever; not to bother about to-morrow, which is not ours; but to take the present day and make the best of it. Those women who will continually peer in what lies beyond never have any present life at all—they are always grizzling over the past or prying in the future, and this blessed to-day, which is all that we are sure of, they never have.

HEMORRHAGE FROM TOOTH EXTRACTION.—The fluid extract of *geranium maculatum* will control any local hemorrhage.

THE SIN OF TAKING OFFENSE.

No one is obliged to take offense. A readiness to do it gives evidence of deep-seated selfishness, and a habit of doing it is proof conclusive that folly reigns.

Many who are quite careful to avoid giving offense have not yet come to a full recognition of the fact that taking offense is worse. It betokens a most unhealthy tone of mind. It shows that the thought is fastened on self, that precious self, the most important personage in all the universe; and this petted darling some one has had the temerity, the impudence, to insult or slight! Shall it not be promptly resented?

Yes, by the fool, by him who likes to be continually in hot water. Let him nurse his injuries and care sedulously for his dignity, and make both himself and all around him as uncomfortable as possible. He will find no end of occasions if he is on the lookout for them, and there will be no getting along with him in any sort of peace. At the most unexpected moment he has taken mortal umbrage at something done or said with the utmost innocence. No excuse suffices; he is alienated forever, and in the course of a few years he has managed to get rid of about all who tried, in vain, to show him friendship. He has become perfectly certain that everybody is against him.

Surely there is a better way, even the way of love. He who is full of love will see things undisturbed by the blinding mists of selfishness which steam up from corruption within. He will behold realities, not appearances; facts, not fancies. He will have tender pity for the failings and weaknesses of others. He will be full of such genial kindness that no amount of ill-behavior can make him cross. He will have so much of sweetness in him that circumstances cannot sour him. Love is a little child. Love lives in sunshine. Love believes all things that make for peace; is ignorant and incredulous regarding evil; delights to humble itself before others, and prefer them in honor. It does not take offense.

No one can do so without guilt. No one can do so and have that happiness which is God's gift to his children. Wise is he, and truly blest, who absolutely refuses to receive the affronts that may be proffered him, who positively declines to feel aggrieved no matter who attempts to put grief on him, who promptly and obstinately thrusts out of his thought the injury that some one thought to do him. We are our own masters in this. Our actions flow from our feelings, our feelings from our opinions, and our opinions are our own. Everything is susceptible from what we are. If we look at it from the proper angle, we shall find no occasion for turmoil.

OUR QUESTION BOX.

With Replies From The Best Dental Authorities.

[Address all Questions for this Department to Dr. E. N. Francis, Uvalde, Texas.]

Question 196. *What should be the age of a child before the use of gold for fillings?*

Twelve to sixteen years. Never use gold for filling before development of root is complete. *J. H. Murphy, Flatonia, Texas.*

I do not advise the use of gold in children's teeth till the age of fifteen. *W. T. McLean, Cincinnati, Ohio.*

Depends on development of child. Not in any case before twelve years. Prefer plastics till sixteen years. *A. W. Davisson, Atlanta, Ga.*

If possible wait till the patient is eighteen years of age; but if teeth are of good structure, I have used gold at the age of fourteen, but never before. *Richard Kessel, Buffalo, N. Y.*

As a rule, gold fillings should not be used in the teeth of children under sixteen years of age.

Occasionally we find teeth that seem to have developed earlier, when, if the patient can endure the strain, and we can do work of a permanent nature, we do not hesitate to use gold at a much earlier age.

Charles B. Baker, Bridgeport, Conn.

I never fill children's teeth with gold. I use either gutta-percha, cement, or amalgam, believing that gutta-percha, especially, is unequaled as a filling material whenever its use is indicated.

At the age of twenty, or over, I frequently remove the plastic fillings in the anterior teeth and refill with gold. I think an operator who uses nothing but gold for fillings makes a greater mistake than one using nothing but plastics. *C. H. Haines, Dexter, Me.*

As to any special age for using gold in children's teeth I acknowledge none. When I think the tooth strong enough, dentine dense, and the patient wants gold I use it, but generally they want, and should have, something cheaper.

I filled for a brother, ten years of age, a first upper bicuspid, buccal cavity, slightly under gum, with gold, and it is there to this day, only now it appears in the center of tooth. *H. S. Abendschein, Baltimore.*

Question 197. *Is it good form to have in the operating-room a notice reminding patients that payment is expected after each sitting?*

No.

C. H. Haines.

No. Circumstances would, however, in some communities possibly suggest yes. *J. H. Murphy.*

I do not consider it good taste to have such a sign conspicuous in the operating or reception-room.

W. T. McLean.

No, sir; but patients may be politely reminded, by word, what is expected of them.

A. W. Davisson.

Depends on the kind of practice you have. In private practice I am decidedly against any sign in the office. In a practice depending largely on transient business it might be admissible.

Richard Kessel.

No. When in doubt as to the ability or inclination of a patient to settle an account, the use of a rubber stamp with the following inscription across the front of the appointment card will serve as a gentle reminder:

"Fees are expected as soon as work is completed."

Charles B. Baker.

[We favor Dr. Baker's suggestion.—ED.]

I do not see why it should not be good form with right-minded and honest people. I have one, and it benefits me more than I expected, especially with new patients. Some of the old ones make fun of it. Mine reads: "Terms cash after each sitting—it does me good."

H. S. Abendschein.

Question 198. *A man, thirty years of age, is having trouble with a tooth in which the nerve was killed, and tooth treated a year ago? He complains of its being quite sensitive to heat in the morning, less so at noon, and often free from sensitiveness at night. Cold air or water will at once relieve the pain caused by his coffee. It has been sore and elongated twice since filling. Other teeth close to it have been filled, but I can not, in any way, connect them with the case. The pulp was carefully removed with Gates-Glidden drills. What shall I do? Do others have such cases?*

It can do no harm to remove canal filling and treat it again, as pus is forming at the apex; but before going to this trouble examine carefully the adjoining teeth.

Richard Kessel.

Trouble is probably due to pent-up products of decomposition which may be in pulp cavity or socket of alveolar process. This principally CO_2 gas.

Remove filling entire, treat canal alternately with carbolic acid and oil of cassia. Fill with chloro-percha on cotton, and after all signs of decomposition have disappeared, a temporary filling is to be left in for a year or more. Have had several such cases.

A. W. Davisson.

Have had a few such cases. Some I left alone and they came around all right; others I opened and used Donaldson plain barb broaches with Brainard's embroidery silk in thin paste of iodoform and cajeput oil, using a temporary filling in crown of pink gutta-percha. Now, I first use a 4 per cent solution of cocain with hypodermic syringe between gum and side of tooth, and if this does not prove successful I open and use above treatment.

H. S. Abendschein.

All dentists meet with similar cases. The symptoms are those liable to manifest themselves at any time from a pulpless tooth however well treated.

If the inflammation is not too far advanced, painting the gums with tincture of iodine and glycerin will often work a temporary cure. Eventually

the pus will find an outlet through the gum. An injection of peroxid of hydrogen followed by weekly injections of slightly diluted aromatic sulfuric acid will often cure these cases.

C. H. Haines.

Open up canal, dry thoroughly, force in iodoform vapor (use Blair's vaporizer) and close cavity with gutta-percha. Let this remain five or six days, then if soreness has not all disappeared repeat treatment once a week. I have never failed to obtain relief with this treatment.

The trouble is inflammation at apex of root—possibly too much devitalizing agent. I am disposed to think it too much Gates-Glidden drill, as I do not recommend the enlarging of root canals with drills. If I fail to enter a canal with Donaldson cleansers, I dry with hot air followed with iodoform vapor; fill cavity, and expect no after trouble.

J. H. Murphy.

I have never had such an experience as the question implies, but would say, the pulp has not been entirely removed and the apical space is filled with pulp débris, which produces periodontitis.

If the tooth is filled I should advise the removal of filling and careful treatment, insert temporary filling and await results, which should be entire relief from symptoms stated. In a few weeks insert permanent filling. The Gates-Glidden drill for removal of pulp is to me not the most desirable instrument, and I am inclined to believe it may have caused the peridental inflammation which produced the elongation of tooth in question by pressing portions of the pulp in the apical space.

W. T. McLean.

You do not state which tooth it is, or with what the root or crown is filled. The trouble might arise from a variety of causes: A portion of the pulp might have been overlooked, there might be a deposit at the end of the root or its enlargement. If one of the ten front teeth in either jaw, I should not hesitate to extract, treat the socket antiseptically and the root in the usual way and replant.

I have never had a similar case.

Charles B. Baker.

Question 199. *I would like to ask what sodium peroxid is? Where can it be obtained? Will it keep? Method of application to sterilize root canals, etc.? I have inquired for it in five local drug stores without obtaining any information.*

Your local druggist can obtain sodium peroxid from any large wholesale drug house. The smallest amount we have been able to obtain is in one-quarter pound packages. Peroxid of sodium comes under the head of explosives and can not be sent by mail. We have never used over a forty per cent solution, and prefer to regulate the strength to suit conditions and as our judgment dictates. The teeth treated have not had sufficient time to develop any unfavorable symptoms, and we do not feel competent to advise the solution best suited to general practice.

Trichloracetic acid occupies a place next to peroxid of sodium in our medicine case, and there will always be a hesitancy in selection till experience of a few years proves one or both superior under specific conditions in the treatment of pulp canals.

In making a solution of peroxid of sodium we use a tumbler containing the required amount of distilled water, and this is placed in a basin containing ice-water of sufficient depth to keep the contents of the tumbler cool while the sodium is added or floated in very small quantities. If not carefully mixed the solution is of no practical use for the purpose intended.

Trichloroacetic acid is free from these objections, as no perceptible chemical action takes place when combined with water.

The sodium has some bleaching properties, which, in the treatment of pulp canals in dead teeth of long standing, may be of some advantage.

Question 200. *Please inform me as to the requirements demanded by the Texas Dental Law for a regular graduate from a reputable college.*

We regret to say that the Texas dental law is, as near as we can find out, at present, a "dead letter."

Hobbs, the celebrated locksmith and maker of the first complicated bank-locks, which were marvels of ingenuity, was brought before a bank committee to have him show cause why he asked such high prices for his inventions. They had him take the lock to pieces, and inquired what each piece would cost to duplicate it. When the sum total was made they found it did not foot up the price Hobbs asked for the completed lock. How is this, Mr. Hobbs? He then looked over all the items, and said to them, "Gentlemen, there is one item you have left out." They could not tell what it was,—when to their chagrin, he said, "Brains."

REMODELING A RUBBER PLATE.—A plaster impression of the mouth was taken, the band of the plate was cut down almost to the teeth, and the entire center cut out, so that nothing was left but sufficient rubber to hold the teeth in place. This being placed on the plaster cast and waxed up as usual, was next tried in the mouth and slightly changed to obtain the correct articulation, after which it was finished in the usual way. The result was satisfactory, and the whole thing was accomplished with a very small expenditure of time.

Dr. Davenport.

SWALLOWED HIS TEETH.—Twelve years ago I made a farmer, now living in Guide Rock, Nebraska, a full upper and lower set of teeth. They did very good service till eighteen months ago, when he let fall the lower and broke off two molars and one bicuspid on the left side. He kept on using the plate with reasonable comfort. About thirteen months ago, while eating, he gave one gulp and jerk, and away went his eleven artificial teeth down in his stomach. In a minute afterward he complained of a tearing sensation on the side of his neck, and next in the stomach. Still, he overlooked the loss of his teeth till he remembered having washed them before eating, and adjusted them in their place. He has taken purgatives, but to no avail. He complains of a pain in his side at times, but eats and sleeps well.

D. W. Henderson, Mankato, Kans.

PRACTICAL POINTS.

Mrs. J. M. Walker, Bay St. Louis, Mississippi.

Protection of the Teeth.—Tell your patients, when taking muriatic tincture of iron, to use Vichy water as a medium. The most economical method is to procure the salts of Vichy, kept in all first-class drug stores. A quarter of a teaspoonful in three ounces of water forms a safe medium, rendering the iron easier of assimilation and preserving the teeth from the injurious effects of the acid.

C. B. Colson.

Impression of Root Canal for Crowning.—To insure maximum thickness of pin and minimum quantity of cement, shape the canal, mop it out with glycerin, fill it with pink gutta-percha and insert a "small French nail" leaving the head projecting. Take an impression over all with modeling compound. The gutta-percha will come away on the pin, giving an exact impression of the root canal.

Ed. J. Caster.

To Retain Medicaments During Treatment of a Tooth.—Seal in with cotton saturated with a chloroform solution of aristol, instead of using sandarac varnish.

* * *

Asbestos Fiber in Root Canals.—This material affords an admirable vehicle for carrying dressings in the roots of superior teeth, where the effects of gravitation must be overcome. It remains unaffected by the ferment agents there present, or by agents used in concentrated solution, which disintegrates cotton, silk or wood fibers. Being non-combustible it is instantly sterilized by heating to redness, and forms a permanent and unalterable root-filling material in connection with oxichlorid of zinc, chloro-percha or paraffin.

E. C. Kirk.

Impromptu Capsicum Pads.—Cut a raisin in half lengthwise, remove the seeds from one half, and with suitable instrument work in the pulp of the raisin equal parts ground capsicum and ground ginger. Apply the medicated side directly over the root of the affected tooth. They stay well in place and easily adapt themselves to the unevenness of the gums.

W. H. Gage.

To Obtund Sensitive Dentine.—Apply carbolic acid, followed by tincture of aconit root, repeating as necessary. This seems to partially anesthetize the nerve sensation. Use only keen, sharp, modern burs, and don't use on the sensitive dentine the bur you have just dulled in cutting away enamel.

J. N. Crouse.

Protection of Nearly Exposed Pulp.—Place in the bottom of the cavity a thin piece of asbestos paper of proper size with some Canada balsam; use cement over that.

C. S. Van Orden.

Root Canal Filling.—*Cotton.*—" * * * While I am not in the habit of filling canals with cotton alone, I will say that if gentlemen will take a bit of cotton and a little aristol moistened with chloroform, and pack it carefully in a root canal, they will have a filling that will protect it as well as any other material they can place there. * * * Whether I use chloro-percha or gutta-percha, I am in the habit of filling the end of the canal with cotton and some good antiseptic, as iodoform or aristol; first putting up the cotton and then filling with the gutta-percha. That makes a good filling."

C. N. Peirce.

Pulp Extirpation.—"I have good success by the use of cocain and nitric acid, mixed to a creamy consistency and applied with a smooth platinum broach. It acts as a painless cautery."

J. W. Billings.

Pyorrhea Alveolaris—Malarticulation as a Factor.—After removal of calculus study the articulation carefully. Malarticulation is one of the causes of mechanical irritation too often overlooked. An individual tooth that strikes too hard, causing pericementitis, should be ground off, or a rubber cap placed on the adjoining tooth till the tooth settles back in its socket. If a permanent malocclusion, correct by the mechanical means adapted to the case in hand. Between sittings prescribe 3 per cent pyrozone with a soda-mint tablet added, at time of using, as a mouth wash.

W. X. Sudduth.

Filling Deep Irregular Cavities.—Fill the bottom with cement, and while this is still plastic, work in it a pellet of soft amalgam on which to build the filling of hard or "wafered" amalgam. Keep the margins free from cement.

L. P. Leonard.

Adhesive Cement Fillings.—Paint the walls of the cavity with the fluid furnished with the cement powder, before inserting the plastic mass. A filling thus inserted will require a bur or drill for subsequent removal.

E. S. Gaylord.

Crowning Badly-decayed Roots.—In extreme cases, when a root is very badly decayed, scooped out considerably, or very short; a band of very thin platinum plate, made to fit very nicely, may be used to lengthen the root; filling it with amalgam, and crowning with a gold shell in the same way as over a good root.

G. V. Black.

To Prevent Modeling Compound from Sticking to the Natural Teeth.—With a pellet of cotton dipped in glycerin, oil the teeth; then take impression before the patient closes the mouth.

A. Bowen.

Cement Fillings Near the Pulp.—In deep-seated cavities, instead of the oxiphosphate, which endangers the pulp, use Fletcher's nerve-capping and oxiphosphate of zinc. It is perfectly non-irritant, and hardens in a very short time.

Dr. Ives.

Adjustment of Logan and other Similar Crowns.—Where there has been much loss of tooth structure, with more or less weakened root-walls, remove all softened structure; fill the apex; make suitable undercuts or roughnesses within the canal, and fill flush with a good grade of copper amalgam softened to a plastic condition; have the crown ready with the apical end of the pin sharpened to a point, or hatched edge; place the point against the amalgam surface in the root opening; hold in contact with the morsal surface of the crown a suitable point (as a hickory point held in a porte polisher), and force the crown to close contact, driving out all excess of amalgam; offers the advantages of insolubility of material, and gives complete support to a weak root.

E. C. Kirk.

Sodium Peroxid in Root Canals.—A student in the Philadelphia Dental College reports very successful results from the following simple method:

Apply the dam; cleanse and prepare the cavity; place in the pulp chamber a small portion of finely pulverized sodium peroxid; flood the cavity with water, allowing it to remain till the agitation from the combination ceases; then wash out and treat as usual.

Immediate Root Canal Filling.—After removal of pulp saturate the canals with zinc chlorid and dry; next bathe the canals with peroxid of hydrogen; place small quantity of iodoform at apex and fill with gutta-percha.

Dr. Cigrand.

To Sharpen Burs and Files.—Boil in soda water, and clean out all débris; wash off the soda water and keep them in sulfuric acid diluted with half water for two or three hours; rinse thoroughly in soda water; wipe dry, and oil slightly.

T. B. Welch.

Combination Filling.—Fill the bottom of the cavity with cement; cover this with alloy; then finish with Steurer's gold before the alloy hardens. The cement keeps the tooth comfortable; the alloy is readily packed over the cement; the gold adds to the satisfactory appearance with all the good qualities of each material, while the filling is of more value than if made of either, alone.

Benj. Lord.

Combination Filling, Cement and Amalgam.—In cases of very extensive decay, extending below the gum in distal and buccal cavities of the molars, after partially excavating, carry a thin matrix down below the decay; over the matrix adjust the dam. Complete the excavating, pack amalgam against the matrix, fill the body of the cavity with cement, and finish with amalgam.

D. M. Clapp.

Opening Pyrozone Tubes.—Pyrozone 25 per cent being highly explosive many are lost in opening. Try the following method: Hold the tube under running water a few moments, then wrap in a towel and grind off the end on a smooth corundum wheel on the lathe.

F. L. Browne.

Pulp Capping.—A film of celluloid, such as is used by photographers, moistened with spirits of camphor, becomes soft and placid over an exposed pulp, sticks to the cavity walls and makes a very nice pulp-capping.

D. M. Clapp.

To Preserve the Unused Portion of the Etherial Solutions of Pyrozone.—Transfer to a ground-stoppered bottle, first coating the stopper with vaseline; then pour melted paraffin over it.

I. N. Carr.

Retention of the Rubber-dam.—To hold the dam in place, water-tight, with a ligature, use chloro-percha to hold it, and avoid the torture of drawing the silk under the gum.

Chas. W. Jenkins.

Band Material.—A nickel (five cent coin) rolled out thin for bands, etc., is superior to the German silver band material that we buy at the depots. It is tougher, has better color, is more easily soldered, and will yield more than twice as much band material as the Angle coil, which costs fifty cents.

B. D. Brabson.

Combination Filling, Amalgam and Cement.—Make a mix of amalgam as for ordinary use, and a mix of cement rather thin. Take equal quantities of each on the slab and grind them together, rolling with the fingers. Dry the cavity thoroughly and place a lining of cement next to the walls of the cavity; make the body of the filling of the mixed amalgam-cement, which will be found to be soft and adhesive. Complete the filling with amalgam alone.

Dr. Knight.

To Prevent Recurrence of Discoloration in a Bleached Tooth.—Fill the tubuli with white paraffin, melting it in by placing it in the pulp cavity and passing a heated piece of metal over the surface of the enamel.

I. C. St. John.

ITEMS.

BLEACHING TEETH.—Saturate the dentine with strong sodium peroxid, followed by treatment with dilute hydrochloric acid, to neutralize the alkali. Wash with hot water. *E. C. Kirk.*

* * *

SPECIFIC FOR APHTHOUS STOMATITIS.—One application of trichloroacetic acid is sufficient to stop further progress, if used on first appearance of mucus patches. *J. A. Dunn.*

* * *

Much time and labor can be saved in finishing rubber plates by varnishing the lingual side of the investment with liquid silex, and allowing it to dry thoroughly before packing.

J. M. Chase.

* * *

"Have you anything to say before we eat you?" asked the king of the Cannibal Isles of the pale faced stranger.

"I should like to address a few words to you on the advantages of a vegetarian diet," was the reply. *Answers.*

* * *

TREATMENT OF "BLIND ABSCESS."—Free the canals from all septic matter and pump in campho-phenique with ten per cent aristol. Place in a loose dressing of cotton saturated with aristol. Repeat till no more pus is found in the canal. *Charles Keyes.*

* * *

Of course, Dr. Catching is out again with his "Compendium," this time with a multitude of good points from the various journals of 1894. He certainly shows judgment in his selections, and gets up a readable, useful, book.

* * *

SENSITIVE DENTINE.—Moisten a pledget of cotton with alcohol, take up crystals of nitrate of silver and place in contact with sensitive dentine, retaining in place by molding over it a gutta-percha cup. Leave it in place for a day or two, when the dentine can be excavated without pain. *S. W. Foster.*

* * *

SMOOTH MODELS.—After getting the impression in plaster, give it a coat of shellac varnish, not too thin. After the varnish is perfectly dry, instead of oiling, sprinkle powdered soapstone (or French chalk, so called) over the impression, then with a soft brush rub every part of it thoroughly, finally shaking out the surplus. Mix the plaster thin, and pour, tapping the cup gently till the plaster commences to set. *The Ohio Journal.*

To remove the black deposit from rubber plates that have been in long use, I take alcohol, ammonia, and chloroform equal parts. Pour a little of the liquid on the plate, add pumice stone, and quickly scour; then polish with oil and plaster in the usual way.

Dr. W. D. Tickner.

* * *

Mr. Lawson Tait is probably the most aggressive opponent of the germ theory of inflammation. He says that during his professional life he has learned and unlearned some four or five theories of inflammation, and predicts that the present prevalent theory—a phase of lunacy; coccophobia—will soon go the way of the other theories.

Medical Age.

* * *

It takes a better dentist to make a financial success now than it did ten years ago. Our ranks have been largely augmented, and the standard of work has correspondingly advanced; and the *personel* of the profession has greatly changed. Ten years hence the man who sticks to the methods now in vogue may find himself more of a "back-number" than the laggards of to-day. For the rapidly increasing dentists in all our States to enjoy even a moderate living from their profession, it will be necessary to keep wide-awake and use every energy at their command.

Pacific Dental Journal.

* * *

CYST OF THE ANTRUM OF HIGHMORE.—Otto Umgren had under his care a baker, of thirty-five years, tall and thin, who for a long time had suffered from pain and swelling of the right cheek. Sensibility to pressure, however, was not increased. The tumor was hard and firm. Extraction of the first molar gave exit to a large quantity of sanguinolent pus having a bad odor, but not fetid. On sounding through the extraction wound, Umgren found a cavity the size of a small hen's egg, extending in various directions. There was no issue in the nasal cavity for the pus, which had accumulated in the antrum of Highmore.

Journal Odontologique.

* * *

If any dentist is not satisfied with what he is using as a bracket table cover, let him try the simplest and best of all materials available for that purpose. Buy some large sheets of ordinary blotting paper, of color to suit individual taste, and cut to fit the table. When one side is soiled turn it over. It is neat and clean, cheap, and is more noiseless under the instruments than any other material. Cut the surplus paper in small pieces, and use them when you want a place to lay a cork, or anything that might leave a spot. Try it.

P. R. Chance, D.D.S., Leipzig, Germany.

EDITORIAL.

PLEASANT STREET VS. DINGY LANE.

What say you to moving over into Pleasant street? They are getting along there much better than in your old Dingy lane. It is a bright, cheerful place over there, and they pay us well for our work. You will not get sleepy and tired with rest over there, and spiders and mildew do not thrive. I am told it is a good place for business, and a sure cure for blues and dyspepsia. You find plenty of fun and nuggets of gold over there, and dentists look sleek and fat, while in Dingy lane they are noted for being lank and lean. It must be a good place to live over in Pleasant street, for it is a favorable place for the rich and gay, and their pockets are filled with money for bright tradesmen and professional experts. No unskilled workman need apply.

Come, wake up, wash up, dress up, and move over there. Never mind your old shoes, nor your old clothes, nor your old truck. They don't use old trash over there. Sell them and all your rusty old tools to the junk dealer, and buy new. And be sure to select the best, and the most tasty patterns, and to make your office inviting and cozy. Be sure and call on Mr. Public Opinion on the way. He will pay all your reasonable bills if you are worthy, and insure your business besides. And don't forget, on your way over to step into the tailor's and buy a professional suit of clothes, and a new hat and a good cigar—beg pardon; smoking dentists are at a discount over there; and breaths scented with stale beer. Dentists on Pleasant street must be as sweet and clean in body and mind as a woman. And be sure to leave your coarse language and ill-manners behind—the demand is for refinement and good taste and gentlemanly conduct. Your very office must be as neat and clean and presentable as a lady's parlor.

With all this you will not need to tell the people you are a good dentist; they will take it for granted till you disprove it by betraying ignorance and blunders. By all means, don't put a play

card on your coat, nor advertise cheap dentistry. Here they want good work, and for this they are willing to pay good prices. And be sure you keep up to the music of progress.

THE BEGINNING OF THINGS.

We are all apt to underestimate casual incidents, and overestimate great occasions. We laugh at trifles, and puzzle our brain with subjects too deep for us. We wait idly for something wonderful, and allow incipient opportunities of marvelous possibilities to pass unimproved and even unobserved. Thus we disdain the day of small things, and magnify the importance of the day of final results.

But often the beginning of things is of greater importance than the process of building. The selection of our field, the clearing of our view, the solidity of our foundation,—yes, and before these, the conception of our work, our adaptation to it, and the demand for it,—and still further back, our culture for this conception and adaptation and demand,—these must all be thorough, clear and strong, or the superstructure may be in vain.

Yes, and back of all these, and what leads up to the greatest achievements, is the improvement of some of our most random thoughts, mere trifling impressions, glimpses of light, glimmerings of some transcendent reflection, trivial fancies flitting across the imagination. Many a man's life success, the destiny of many an enterprise of vast importance, depends on his seizing instantly some of the minutest beginnings of things. Neglecting these he neglects all that follows, seizing them he rides to fortune and to power.

Even with God there are these beginnings of things. In the beginning of this great world it was the subtle forces of inconceivable minuteness on vast vacuity—causing to be what was not—a growth from nothing, so slow and insignificant as to be quite beyond our conception; and yet from these what came? Hear the historian: In the beginning the earth was without form, and void; and darkness was on the face of the deep. And the Spirit of God moved on this vast abyss of darkness—this darkness of noth-

ingness—and said, Let there be light, and the clashing and mingling of elements produced light; and this darkness and then this light were the first day.

What a beginning! What a day, an age of day of beginning!—till finally after successive ages of days, these warring elements became fire, and this fire substance, and this substance a molden mass, and this molden mass a crystallized form, and this crystallized form solid rock, and this solid rock, in its terrible upheavals and mighty powdering by volcanic bursting added to the disintegration by steam on the heated surfaces of the rocks—all producing soil. Yet still what ages before this soil brought forth vegetation and vegetation supported animation? Five long ages—and then man and paradise!

In a subordinate sense we are all creators. Our passions and intelligence and patient working may bring forth a world—not suddenly, but by long processes of changes and growth from the beginning of things till maturity brings perfection. With God, through all these changes and ages this world has not reached its perfection,—it shall yet be “a new heaven and a new earth.” So we, if we do the work appointed us, though we shall change and grow and become stalwart, we shall not reach our perfection here, but in a new beyond. We are here to see the beginning of things, *there* we shall see their perfection.

But how many fail in their efforts. They and their world fail at birth, or in infancy, or in childhood, or at any rate before maturity and fruitage. They do not even vegetate; they are barren rocks, without even fire beneath to burst and scatter the hard surface, that *something* might grow—a dry and lifeless existence without germination or inspiring influence or warmth or geniality.

O how many beginnings of things there are—mere beginnings of things scattered on the earth's wide waste having not in them the vital impulse for struggle and maturity, or if the germ, yet without the conditions of a springing life. We make the beginnings of things by the hundreds,—seeds that might have brought forth something grand,—but alas scattered and dead. Shall this represent your life and world making? or shall your life bring forth a paradise?

WORDS.

Words are pretty things—useful, powerful, wonderful things; I love them. They are still more characteristic and charming—yes, enchanting, bewitching, inspiring—when in association. They trip and frolic along our path, or, in more measured tread, give us wisdom in profound problems; they come bowing and courtesying like Brownies of all sorts and sizes to make us fun, or looking like owls of wisdom. But unlike Brownies they are of real worth and practical importance. By the slightest effort they are serious or gay, profound or foolish, learned or grotesque; they can romp with the children, dance with the maidens, frolic with the boys, and walk with the stately measured step with the profound; they can suit themselves to the busy throng, or be at home with the matron; they can shoot darts between wooing lovers, or find weighty artillery for fierce debaters; they can sail proudly on the wings of orators, or sit down by the side of the astute philosopher; they can bob up and down like Juda and Jerry at a fair, or give out the deep mysteries of the alchemist; they can fly about as butterflies, or hide like golden nuggets in the earth. Meet them where you will and they are prepared for your every want.

How they chase each other through all the moods and tenses, whims and tempers, shades and colors of our life, dancing and singing, winking and blinking, hiding and seeking, defying and tantalizing. By the slightest change of relation they show infinite variety, modification and marvelous transformations. They give us a continual panorama of delight. As they array themselves for our entertainment how they laugh and play. I like their form; they dance along like the frolicsome brook, or dash away like the roaring cataract, or they are placid and serene; they remind us of the strong deep current, and then mounting the clouds come in the whirlwind and thundering storm. By their genius they carry us on from play to grave things, from hilarity to serious things, from the superficial to deep things of life and death, of heaven and hell.

What could we do without them? What should we be without them? Our thoughts would struggle for utterance, our plans would die for expression, our wisdom would languish for an inter-

preter, and the great distinction between us and the dumb brute would vanish.

Their very amusements edify us, and their edification develops and matures us. Everywhere and with increasing influence they are our welcome companions, our intimate friends and our wise instructors.

THE ORDINARY AND THE EXTRAORDINARY.

The dentist that can do only ordinary work must not complain if he is estimated as only an ordinary dentist. Is there any one within reach who is in any way a little above this? Then, of course, that dentist will have the cream and our ordinary dentist will have the skim milk. And he must look out, or he will not have as much skim milk as his neighbor has of rich cream.

Of course, if he is not able to rise above the ordinary he ought to be contented with his skim milk, though he be obliged to cry out, like the man of old, "My leanness; oh, my leanness!" But how often this ordinary position in society and in the profession is not so much from inability to rise, as from laziness, bad habits, and want of enterprise.

An ordinary dentist said to me the other day, "I can do gold crown- and bridge-work as well as my neighbor, but I don't have it to do. Somehow he has the reputation that he can do anything, and I have not. That's the only difference."

No; that was not the only difference. His neighbor had demonstrated that he could do this kind of work, and this gave him his reputation that he could do anything else; because he could do this extraordinary work they believed him to be an extraordinary dentist.

We are usually estimated by that which is most conspicuous in us, and if this is something above the average then we are estimated to be above the average, and it is generally a true judgment. Can you get there? You will find it a rich mine to work in; but, remember, you must be an expert digger. Several men worked at a gold mine out West and found nothing. They worked only at the surface. They sold out cheap to an expert who went to the heart of the mine and got rich.

AN AWKWARD BLUNDER.

Have you not sometimes made an awkward blunder just when you wanted to be specially gracious? We have, and we have just now repeated it. We have put one man's head on another man's body, and sat that misfit up for all the world to look at as our stupid blunder.

"Is that Prof. Flagg?" says Dr. Barker, of Brooklyn. "The body is Dr. Bonwill's. I have seen him too often to be mistaken, but the head—well, that must be Prof. Flagg's, for you say so yourself; but it seems to me Prof. Flagg is in the wrong place. Have you not made a blunder?"

Then comes Prof. Flagg himself. "What does this mean? Am I, indeed, Bonwill, or is Bonwill me? or is this a caricature? I recognize my head; but, goodness gracious, you have put it on another man's body."

And so, indeed, we have. We have actually tried to make Prof. J. Foster Flagg Dr. W. G. A. Bonwill, and Dr. Bonwill Dr. Flagg. No wonder both are displeased. Look on pages 265, 294 and 316 of *MAY ITEMS*, and see how stupidly we have given Prof. Flagg articles written by Dr. W. G. A. Bonwill, just as though there was any resemblance in the two men, or in anything they might say.

It was certainly an awkward blunder. How it happened we have no idea. We wish we might prove it on the devil—in the printing office. Wouldn't we wrench his big pitchfork from him and give him an awful thrust? or was it done by a thoughtless underling in our own office? We wish it had been; but we are provokingly afraid it was our own blunder, though we have no possible recollection of it, or how it could have occurred. But we are glad they are both good writers.

We once made Dr. William Trueman say what Dr. William Truman said. This was a little excusable, for we could easily say the printer put the "e" in the wrong man's name, though this hardly satisfied our conscience; but here we have no excuse. We simply ask some one to flog us. The professor ought to, but will not, and the doctor only laughs.

AN ALVEOLAR ABSCESS.

Is there such a thing as an alveolar abscess? There may be, but in a practice of more than thirty years we have not seen one. We have seen ulcers of the alveolus, and on the root of a tooth, but never an abscess of the alveolus nor an abscess on any part of the tooth excepting on the apex of the root.

An abscess on the apex of the root may produce by the pressure of its sack an absorption of the contiguous alveolus, and it will make for itself a passage through it and the adjoining tissue for the drainage of its accumulating matter; but this does not prove that the abscess is on these, or even attached to them, or that it seriously affects them. In fact, it is so separated from them by its strong, tough sack, and by its fleshy tube which drains its accumulating pus, that generally all communication with outward tissues is prevented.

Do not doubt our assertion because you have so often seen matter issuing from the gum all around a tooth, especially on the slightest pressure, eating in and dissolving the alveolus, and of even the side of the tooth itself, loosening it so that it is almost ready to drop out. All this is not from an abscess, but from an ulcer. This shows the necessity of ever keeping in the mind the distinction between an abscess and an ulcer. The latter has no sac to keep its matter within bounds; the former has. The matter generating from an ulcer is extremely acrimonious, whereas that from an abscess is comparatively innocent. The poisonous matter on the side of a tooth, or in the alveolus, spreads freely in all directions, and disintegrates all it touches. As it oozes from around the gum of a tooth, touch it with the litmus paper, and see how intensely acid it is; so corroding is it that it dissolves even the enamel. Not so with the pus from an abscess. The latter may be present for years with little harm. But dislodge its sac from the apex of the root and you destroy it forever. It never has attachment anywhere else, and cannot live, unless it is allowed to remain as the connecting link between the tooth and the former nerve. This is the reason it should be called an abscess of a tooth and not of an alveolar abscess. Ulceration may attack a root while it is still alive, an abscess never.

HINTS.

We have received the program of the Iowa Dental Society showing bright thoughts for discussion; and they are able to handle them in that State.

* * *

The Vanderbilt University sends out a beautiful booklet setting forth its standing and facilities, and gives an extraordinary showing of success.

* * *

HOW TO REPAIR A GAS-BAG.—Take rubber-dam, coat the one side with chloroform, place it over the break and press it down for ten seconds, and the break is made whole.

* * *

TO HARDEN PLASTER OF PARIS.—Add one-tenth per cent of marble dust to the plaster of Paris, and mix with it about six per cent of powdered alum or the same quantity of ammonia. These must be added before stirring with water.

* * *

Ah, there is more to live for than the almighty dollar. A man may have these in abundance and be poor indeed. Even wealth and position, success and popular applause, are of small account if to buy these we have to part with the simplicity of a loving character, the sweets of a genial nature, and the unspeakable comfort of harmony, contentment and a happy home.

* * *

Dr. Noble says any State is competent to enact a law qualifying college professors to serve on Examining Boards. He himself has served on an Examining Board with a teacher from one of the colleges, and found that he was able to give the board valuable information and assistance. It would be a source of pride to the colleges to have a representative on the board to see that their work was up to the standard of their fellow-men on the board.

* * *

Alabama enjoys the distinction of having passed the first dental law of any State of the Union. This was away back in the early forties.

There are three lady honorary members of the Alabama Association, Mrs. Walker, Mrs. Foster, and Miss Jean Daniel, the latter being now a resident of Chicago, but pleasantly remembered by the members.

It is a good thing all dentists are not wide awake. My, in such a sad event what competition there would be for one determined to succeed. It is of little consequence now how many competitors a wide awake dentist has; for those around him are sure to be asleep, or so nearly so, he has a clean road to success. He easily outstrips the whole sleepy herd, and finds himself so far in advance of them he has everything his own way.

* * *

Reputation will be illusory, position will be a snare, and the greatest honors will soon take to themselves wings and fly away, if all are not weighted with a substantial character. What is knowledge, or wisdom, or skill, when with it comes the blighting poison of moral rottenness? What is affability and polish and the most attractive presence, if with these comes the touch which pollutes? To make any genius valuable, any talent sparkle, any gifts and graces acceptable, they must be surrounded with a sweet atmosphere, and they must have the inherent perfume of a pleasant fragrance and the beauty of purity and love.

* * *

I am ashamed of dentists who so easily yield to patients persisting in having valuable teeth out. More than half the teeth extracted might have been saved with proper treatment. Yet how many dentists leave to the patients whether their teeth shall be drawn or saved.

"Which will hurt the most?" they will ask.

Or, "Which will cost the most?"

Or, "If I have them filled will they ever need filling again?"

What a lot of nonsense. And yet we must "in patience possess our souls," and, perhaps, spend much time in explaining and educating such ignoramuses. Better this than do wrong. Not the patient but the dentist should be the master of the situation. And if the patient will not submit to superior wisdom dismiss him rather than do wrong.

* * *

THE POWER OF IMAGINATION.—Dentists have a splendid opportunity of studying the power of imagination. An uptown practitioner, by way of illustration, told a *New York World* reporter about one of his lady patients. She entered, accompanied by her husband, and pointing to her swollen face asked the dentist to extract the offending tooth. He placed her in the chair, and taking the small hand glass, put it in her mouth for the purpose of examining the molar which was to be extracted. The glass had no sooner touched the tooth than she uttered a frightful scream, and,

bouncing out of the chair, rushed out into the waiting-room, crying that her jaw was broken. The united efforts of her husband and the dentist were for some time unable to persuade her that the tooth was not extracted, and that she could not possibly have been hurt. After examining her mouth with the aid of a glass, she finally became convinced that the tooth was still in its place.

* * *

Be yourself, but be the best of yourself. Be natural, but develop the best of nature God has given you. Be more than yourself, and more than natural, by grasping the powers within your reach.

As you pass through the woods you see a young tree noticeably attractive. Without special training it has a nobler trunk, a larger head and a more symmetrical form. Cut out its superfluous branches, give it proper direction and dig about its roots, and it will grow still better and faster. Give it more room, and so wisely cultivate the soil that its rootlets can take in the richness of the trees fallen for many generations, and it will do still better.

Nature has done much better for us, culture can do still more. If, with native strength and skilful culture, we acquire the knowledge of the profound who have lived before us, with the power to transform this knowledge into wisdom, our growth will be without limit.

* * *

Neuralgia and odontalgia may be relieved by a combination of kanvosin and quinin valerianate, given in 10-grain doses, repeated every hour if necessary, though generally one dose is sufficient. It is harmless.

Also, I frequently have patients who have been so crazed with pain they have been unable to sleep for several nights. I immediately give them two tablets (a 10-grain dose), and they are relieved in less than thirty minutes. I usually give them enough for six doses (12 tablets), and charge 50 cents.

This remedy is put up in boxes holding 1 ounce, or 96 tablets, and costs me 85 cents per ounce. They can be had from wholesale druggists; also many retail dealers have them.

Geo. C. Schwarz, D.D.S., Edwardsville, Ill.

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In Connecticut we have a good law, and a Dental Commission of five. Our Commissioners probably have greater powers than those of any other State. *Edward Eberle, Hartford, Conn.*

FOR OUR PATIENTS.

IMPORTANCE OF EARLY TREATMENT OF THE TEETH.

Dr. V. C. Bell, in Teeth and Mouth.

As soon as the enamel is decayed through, the sensitive dentine rapidly disappears under the action of the acids produced by fermentation, and the pulp soon becomes exposed.

Frequently the decay of the sixteenth part of an inch is sufficient to lay bare the pulp. This is extremely sensitive, and the contact of any foreign matter causes the most exquisite suffering. The least change of temperature, or the exertion of any undue pressure on it will so irritate its nerve filaments as to produce severe toothache, and affect the entire nervous system of the head.

Before the pulp has become exposed, the operation of filling the teeth is comparatively painless. The filling lasts, and the tooth remains strong, because the vital portions of the pulp have not been affected.

It is easy to discover when the dentine alone is exposed. This may be sensitive to the touch, to cold and to heat, but the pain is dull, and passes away when the irritating agent is removed. When, however, the pulp is exposed, the pain is acute, constant, severe and agonizing. Thus the degree and character of the pain will indicate the amount of the decay. Should the tooth be neglected when the pulp has become exposed, the latter becomes inflamed, and the work of filling the teeth is very painful, and perhaps impossible, and if the neglect be persisted in, the pulp dies.

DEATH FROM CHLOROFORM.—On April 6th, 1895, a boy, aged twelve years, was brought by his mother to the office of Dr. J. M. Lupher, to have the little finger amputated. Chloroform was administered. The boy looked hearty and robust, but had just recovered from whooping-cough. He was placed in a recumbent position. After a few inhalations the napkin was changed for a thicker one, when the boy sat up and talked. On the renewal of the anesthetic, scarcely had half a minute elapsed when he started up and turned over on his abdomen. He was immediately carried out in the hallway; his tongue pulled out; rectum dilated; artificial respiration carried on for an hour, when he was pronounced dead.

R. N. Randles, Pleasantville, Pa.

ARTIFICIAL SILK.

Something of a stir is being made in England over Dr. Lehner's process of manufacturing artificial silk.

This consists in producing fine threads of cellulose by a process entirely analogous to that employed in the manufacture of macaroni and other similar things. As the thread issues from the tiny glass funnel, in water, the cellulose is immediately coagulated and is made capable of being reeled.

In this condition, however, it is highly inflammable and requires to be de-nitrated by appropriate treatment. The filament then closely proximates true silk in chemical and mechanical structure, and is less inflammable than cotton or rhea.

These filaments are gathered and spun exactly as silk filaments are. The yarn on the spools is practically indistinguishable from pure silk except by chemical or microscopical tests.

It is proposed to form a company in England with a capital of \$540,000, and, as patents have been issued in the United States, it will undoubtedly be similarly promoted here.

The silk manufacturers of England decline to concede that the new fabric will prove useful, and it is said the largest silk manufacturing company in England declined to take up the invention or recognize its utility. The fact that the promoters claim only a high utility as an adulterant of real silk would tend to show that the silk men are probably right.

Tests have shown that the new fabric is in

Strength as 68 to 100;

Stretching " 73 " 100;

Weight " 93 " 100.

The artificial product is more uniform in count, and is said to take dyes perfectly and to stand washing and ironing.

Power and Transmission.

DENTISTRY THE "JACK-AT-ALL-TRADES."—Do you not more frequently and more profitably deal in "plugs" than does the average horse jockey? Do you not make more by "constructing bridges" than any contractor in the country, when the size of your constructions is taken in consideration?

Do you not raise more "roots" than any market gardener? and get more "per root" for all you "raise" than the best gardener gets per peck?

Do you not oftener work on "crowns" than do even the jewelers to royalty?

Capt. Banks.

THAT WAS DIFFERENT.

He stood at the entrance to a dentist's office, and ever and anon he glanced up the stairway, and something like a shiver passed over him. A score of pedestrians observed him and smiled as they passed on, but by and by one halted and said :

"My dear sir, you have my sympathy."

"Thank you."

"I've been right here myself, and know how it is."

"Yes."

"I have stood where you stand, and felt as you feel."

"You have, eh?"

"But I realized that I must face the inevitable, and so I walked upstairs and had it over with."

"Did he hit you very hard?"

"Hit? How do you mean? It hurt to have the tooth out, of course. Perhaps you've got to have two out?"

"Oh, no—my teeth are all right."

"Then, what's the matter?"

"Why, I'm a collector. I've a bill seven years old against this dentist, and last time I was here he said he would knock my jaw off if I ever came again. Oh, no, I haven't the toothache. I'm just waiting around here to get my sand up and go up and tackle him for \$4.50 and get out alive."

Detroit Free Press.

Under the caption of "Liquor Traffic and Public Sentiment," the *Tupelo Times* prints the following from the *Wine and Spirit Gazette*: "The unceasing agitation of the cold water cranks has already succeeded in completely outlawing the traffic in wines, spirits and beer in seven States of the Union. In a majority of the other States it has rendered the traffic contingent on the the popular votes of the isolated localities; in all the States it has greatly increased the license fee, and placed other restrictions and embarrassments on the trade unheard of and undreamed of half a century ago, and in fine it has put the liquor traffic everywhere on the defensive, compelling it to fight for existence."

Picayune.

Dr. L. Gilman, of St. Albans, died recently, much regretted by the dentists of Vermont. He was a prominent and useful man, and one of the organizers of the State Dental Society.

NOTICES.

The American Dental Society of Europe will hold its twentieth meeting at Boulogne-sur-mer, France, August 5th, 6th and 7th, 1895. It is expected that there will be a very full attendance of the members, and that the meeting will be an interesting one. Any professional brethren who may be spending their holidays in Europe are cordially invited to make their plans, so as to be present and take part with us at this meeting. Programs may be obtained of the President, Dr. Charles W. Jenkins, 1 Sonnenquais, Zürich, Switzerland, or of

J. H. Spaulding, Secretary, 4 rue de Rouel, Paris.

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The twenty-fifth annual meeting (the silver anniversary) of the New Jersey State Dental Society, will be held in the "Auditorium," Asbury Park, commencing Thursday, August 1st, at 10 A. M., and continuing through Friday, Saturday and Monday A. M., closing in time for the meeting of the American Dental Association, commencing Tuesday, August 6th, at 10 A. M.

The "Auditorium" is the ideal place for holding a summer dental meeting, being situated in the middle of an entire block fronting the surf, with large windows opening from every side in one continuous row, thirty large windows with north light for clinics and 390x25 for exhibits.

A branch of the Asbury Park post office will be established in the "Auditorium," and a bureau for general information with attendants constantly on hand.

The New Jersey headquarters will be in the "Hotel Columbia," with rates from \$2.50 to \$3.00 per day; several large hotels have made contracts from \$2.50 to \$4.00 per day, and smaller hotels from \$8.00 to \$12.00 per week board.

Full particulars and rates, with map of Asbury Park, and a plan of the "Auditorium" will appear in the program.

Chas. A. Meeker, D.D.S., Sec., Newark, N. J.

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The South Carolina State Dental Association will meet at Spartanburg, South Carolina, July 2d, 1895: Dr. J. C. Oeland, Spartanburg, President; Dr. C. Bunting Colson, Charleston, Corresponding Secretary. State Examining Board meets at the same time and place.

The Pennsylvania State Dental Examining Board will meet July 9th, 1895, at Eagles Mere, Pennsylvania.

Wm. E. Magill, Erie, Pa.

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The Colorado State Board of Dental Examiners will meet in Denver, June 18th to 20th.

W. E. Griswold, President, Denver, Col.

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MISSOURI STATE DENTAL ASSOCIATION.—The thirty-first annual meeting of the Missouri State Dental Association will be held at Pertle Springs, July 9th to 12th, 1895, inclusive. All dentists in Missouri are especially invited to attend, and a cordial invitation is extended to those of other States. It is expected that this will be one of the most interesting meetings in the history of the Association.

W. M. Carter, Sedalia, Mo.

* * *

The American Dental Association holds its next meeting at Asbury Park, New Jersey, Tuesday, August 6th, 1895.

Each State and local society, which has adopted substantially the same code of ethics as that governing the conduct of members of the American Dental Association, is entitled to one representative for every five members.

Blank certificates for delegates may be had on application to the Corresponding Secretary.

Emma Eames Chase, Corresponding Secretary.

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The Kansas City Dental College (not the bogus one) has attained a substantial and honorable position in the profession. At the session just closed it graduated forty students. Its matriculates were one hundred and fifty-three.

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The next meeting of the National Association of Dental Examiners will be held at Asbury Park, New Jersey, Monday, August 5th, at 10 A. M., and at other times during the week as becomes necessary between the sessions of the American Dental Association. It is important that every State Board be represented. Applications from Boards not in membership will receive immediate attention.

Chas. A. Meeker, D.D.S., Sec., Newark, N. J.

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"Transactions of the American Dental Association," thirty-third and thirty-fourth sessions, contains much valuable reading, especially that of the World's Congress. It is hard to particularize, but it should be instructive reading to those who have not already read its chief features in the ITEMS OF INTEREST.

The dental profession of Erie, Pennsylvania, have organized a local Society, to be known as the "Erie Society of Dentists." The membership embraces every prominent practitioner in the city, and starts out with the most flattering prospects. Regular meetings will be held the first Monday evening of each month, and the Society is officered as follows:

W. E. Magill, President; Dr. L. Essick, Vice-President; Dr. F. C. Callaghan, Secretary; Dr. B. D. Schlandecker, Treasurer.

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At the twelfth annual meeting of the Maryland State Dental Association, held April 26th, at Baltimore, the following officers were elected: President, Dr. W. W. Dunbracco; First Vice-President, Dr. Bernard Myer; Second Vice-President, Dr. M. G. Sykes; Recording Secretary, Dr. F. F. Drew; Corresponding Secretary, Dr. R. C. Bradshaw; Treasurer, Dr. J. G. Henisler; Executive Committee, Dr. T. S. Waters, Dr. W. A. Mills, and Dr. B. Holly Smith.

R. C. Bradshaw, Corresponding Secretary.

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The twenty-eighth meeting of the East Tennessee Dental Association is to meet at Harriman, June 11th. This is a good place for these tetotalers to meet. A banquet will be given East Tennessee Dental Association on June 13th, by the citizens of "Happy Harriman." On the 14th a special train will carry the visitors out to the State coal mines at Brushy Mount. All this, together with the interesting program, should insure a large attendance.

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Mrs. Dr. S. M. Townsend, of Denver, writes us that the dentists of Colorado are making great preparations for their next State meeting in Denver, June 18th to 21st. They have some rare talent in that State, and are promised the coöperation of the best dentists of the West. Would that we were far enough West to attend.

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The twenty-fifth annual meeting of the California State Dental Association will be held at San Francisco, Tuesday, July 9th, 1895, and continue four days.

This will be a most interesting meeting, and a cordial invitation is extended to all dentists in our own and other States and Territories to meet with us.

Chas. E. Post, Corresponding Secretary.